THE ROLE OF PSYCHOFORTIGENIC FACTORS ON THE PSYCHOLOGICAL SEQUELAE AFTER ADOLESCENT EXPOSURE TO VIOLENCE

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I declare that the thesis hereby submitted by me for the degree Philosophiae Doctor in Child Psychology and Related Fields at the University of the Free State, is my own independent work and has not previously been submitted by me at another university/faculty. I furthermore cede copyright of the thesis in favour of the University of the Free State.

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MAY 2004

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READER'S ORIENTATION

In accordance with the regulations of the University of the Free State, this thesis is presented in article format.

By virtue of the fact that the same or similar participants, measuring instruments and methodologies were used, an overlap and repetition between the articles will be found in some areas. However, this situation is not unusual in the research community where several articles based on a single study are published independently, although they dealt with interconnected facets of the same project.

It should also be noted that the thesis is submitted as a partial requirement for the Ph.D in Child Psychology and related Fields. The researcher has already met the requirements for two course work modules as required for this particular degree.

SUMMARY

This thesis addresses the role of psychofortigenic factors on the psychological sequelae of adolescents after the exposure to violence. The first article is a theoretical exposition of the effects of exposure to violence on children and adolescents. The second article is an empirical study regarding adolescent exposure to violence and its relationship to selected demographic variables. The final article empirically investigates the relationship between exposure to violence and trauma-related symptoms and explores the health-sustaining and stress-reducing roles of fortitude and sense of safety in adolescents.

The findings indicate that adolescents report a high incidence of exposure to violence either as a victim or as a witness. Furthermore, significant relationships were found between the various subscales of violence and certain demographic variables. However, moderated regression analyses reported direct effects for fortitude on trauma-related symptoms and moderating effects for fortitude in respect to the impact of witnessing stranger violence. Regarding sense of safety, moderated regression analyses indicated direct effects but no significant moderating effects.

OPSOMMING

Hierdie proefskrif ontgin die rol van psigofortigene faktore in die ontwikkeling van sielkundige problematiek by adolessente na blootstelling aan geweld. Die eerste artikel omvat 'n empiriese sowel as teoretiese oorsig ten opsigte van die effek van die blootstelling aan geweld op kinders en adolessente. Die tweede artikel is 'n empiriese studie waarin die verband tussen die adolessent se blootstelling aan geweld en sekere demografiese veranderlikes eksploreer word. Die derde artikel ondersoek die verband tussen die blootstelling aan geweld en trauma-verwante simptome en die rol wat sielkundige sterktes en sin van veiligheid in die adolessent se sielkundige welsyn en streshantering speel.

Die bevindings dui aan dat adolessente in 'n hoë mate aan geweld blootgestel word. Hierdie blootstelling geskied as ooggetuie sowel as slagoffer van geweld. Beduidende verbande is ook gevind tussen die onderskeie subskale van geweld en sekere demografiese veranderlikes. Deur middel van moderator regressie-analise is egter direkte effekte ten opsigte van sielkundige sterktes en trauma-verwante simptome getoon. Dieselfde tendens is ook gevind ten opsigte van blootstelling aan geweld teen 'n vreemdeling gepleeg. Wat die sin van veiligheid betref, het moderator regressie-analise direkte effekte aangetoon, maar geen betekenisvolle modereringseffekte nie.

ARTICLE 1

THE EFFECTS OF EXPOSURE TO VIOLENCE ON CHILDREN AND ADOLESCENTS

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ABSTRACT

Violence is a pervasive phenomenon in society and virtually affecting all strata. In particular, South Africa has unacceptably high levels of violence compared to other countries such as the United States. Of particular concern is the effect that exposure to violence has on children and adolescents. The purpose of this article is to present an overview of available research on the effects of exposure to violence on children and adolescents. Research has indicated that children report psychological symptoms such as posttraumatic stress disorder, major depressive disorder and anxiety. Furthermore, the exposure to violence impacts on children's social and behavioural development, which could manifest in the externalising of psychological symptoms. However, not all children or adolescents who are exposed to violence necessarily succumb to psychological stressors. In an attempt to explain this phenomenon of how some children cope and stay well, it is argued that research should take into account the psychofortigenic perspective in searching for the origins of strength. The article will conclude with exploring the psychofortigenic construct of resilience in children in an attempt to unravel how children can bounce back from an adverse condition and go on with their lives.

INTRODUCTION

Violence continues to dominate the collective psyche of South Africans as the nation is inundated with disturbing images of crime in both the public spheres and the private domains of family life (Barbarin & Richter, 2001). Although crime appears to be stabilising in South Africa, national statistics indicate that measures of murder, robbery, rape and assault are unacceptably high as compared to that of the United States (Peden & Buchart, 1999). A perusal of the recent national crime statistics suggests that there are clear indications that violent acts such as murder, robbery and assault are on the increase in South Africa (Crime Information Analysis Centre, 2003). Furthermore, the Gun Free South African Statistics Sheet,

Facts and Figures (2003) reports that there has been an increase in the number of firearms used in relation to violent acts such as murder. The majority of violent crimes, namely, murder, robbery and assault appear to occur in low socio-economic areas where unemployment is rife and resources are scarce (South African Statistics Sheet, Facts and Figures, 2003).

What is of particular concern is that as a result of the increasing levels of violence, children and adolescents could be exposed to violence directly (as victims of violence), indirectly (as witnesses), and even as perpetrators of violence (Van der Merwe, 2001). In fact, research indicates that many children and adolescents, particularly those in urban areas, are exposed to considerable amounts of life threatening violence in their homes and communities (Barbarin & Richter, 2001; Fitzpatrick & Boldizar, 1993; Richter & Martinez, 1993; Van der Merwe, 2001).

Growing up under conditions of violence could produce a particular set of risks and challenges for children and adolescents. Hence, the possible effects of violence on the psychosocial development of children have become a concern for mental health workers (Barbarin & Richter, 2001; Van der Merwe, 2001) A number of studies have focused on the psychological effects of political violence on South African children (Dawes, 1990; Dawes, Tredoux & Feinstein, 1989; Dawes and De Villiers, 1989; Gibson, 1989). As the South African government has shifted from the legacy of apartheid to one of democracy, political violence has not lead to tranquillity and peace (Barbarin & Richter, 2001). What can clearly be seen is the increase in criminal, interethnic and community violence. Of concern is the number of youth who have become perpetrators of such violence. As South Africa is faced with different forms of violence, research in this regard has become increasingly important.

Few South African studies have examined the emotional impact of community violence on children residing in low socio-economic areas (Ensink, Robertson, Zissis & Ledger, 1997; Van der Merwe, 2001). Furthermore, South African research has traditionally examined the area of violence from a pathogenic paradigm, where the emphasis has been mainly on risk factors and mental health-related problems upon exposure. An understanding of why

individuals develop mental health-related problems from a pathogenic orientation is then used in treatment or prevention (Ward, Flisher, Zissis, Muller & Lombard, 2001).

This article will specifically address research and theorisation on the psychological effects of violence on adolescents. It will be indicated that although South Africa has high rates of violence, not all adolescents necessarily experience adverse psychological symptoms or effects. A number of factors will be explored for the reason that some adolescents appear to cope despite high rates of exposure to community and personal violence. The psychofortigenic approach will be introduced as a possible explanation as to sources of variation in adolescents' response to the exposure to violence. To further illuminate variations in adolescents' response to violence, the construct of resilience, which falls in the domain of the psychofortigenic approach, will be explored in an attempt to explain the factors or processes involved that could lead certain adolescents to cope despite exposure to violence.

RESEARCH ON THE PSYCHOLOGICAL EFFECTS OF VIOLENCE ON CHILDREN AND ADOLESCENTS: A PATHOGENIC APPROACH

A concern of mental health workers is that adolescent exposure to violence is a risk factor for physical injury and has implications for mental health (Ward et al., 2001). Research examining the effects of exposure to violence on adolescent psychological functioning in South Africa has tended to focus on two principal clusters of effects, namely the internalising and externalising of symptoms.

Regarding the internalising of symptoms, three types of disorders or symptoms are commonly reported in adolescents after exposure to violence viz., posttraumatic stress disorder, major depressive disorder and anxiety disorders.

Regarding posttraumatic stress disorder (PTSD), Ensink et al. (1997) investigated a sample of 60 Xhosa speaking children in Khayelitsha in the Western Cape. The study indicated that 21% of the sample that were directly exposed to violence met the criteria for PTSD. The most common symptoms reported were intrusive recollections of the event, intense distress at reminders of the event, avoidance of thoughts and activities associated

with the violent event, irritability and concentration difficulties. Peltzer (1999) found that 8.4% of the sample population of 148 children (6-16 years) in a rural community of Dikgale, near Polokwane in the Northern Province of South Africa, met the criteria for PTSD after exposure to traumatic events. These traumatic events were directly or vicariously experienced such as witnessing someone being seriously injured (e.g. stabbing), murdered, sexually abused or raped. However, the study by Peltzer (1999) failed to identify or distinguish between the participants who experienced the violence directly and those that only witnessed the violence.

A study by Seedat, van Nood, Vythilingum, Stein and Kaminer (2000) investigated 307 grade 10 adolescents from three schools in the Western Cape. All participants were administered self-report questionnaires. In terms of the ethnic composition of the sample, the majority were white (48.9%) and coloured (44.6%), with Blacks and Asians comprising 3% and 3.6% respectively. Over 67% of the sample came from high socio-economic schools. The study found that 12.1% of the sample investigated met the DSM-IV criteria (American Psychiatric Association, 1994) for PTSD. Overall, the study found that socio-economically disadvantaged adolescents had higher rates of trauma exposure and PTSD symptoms, and were more likely to present with PTSD.

In a study of 104 adolescents attending private schools in the Western Cape, Ward et al. (2001) reported that 5.8% of the sample was likely to meet the criteria for PTSD. The types of exposure to violence that were explored were that of witnessing or being a victim of violence perpetrated by a stranger. When comparing the data of adolescents who report PTSD upon exposure to violence it appears that youth, whether living in low socio-economic areas, rural areas or more affluent areas, could be negatively affected by the violence. However, the study by Ward et al. (2001) only reflects the percentage of adolescents who met the criteria for PTSD. It fails to elaborate on the specific symptoms experienced or reported by the adolescents.

In a recent study, Bach (2003) investigated to what extent violence variables led to PTSD in a sample of 186 Venda and 151 Northern Sotho adolescents living in the Limpopo Province. The participants ranged in age from 15 to 18 years and were in grades 9 to 12. It

was reported that almost half of the participants (42.7%) met the criteria for PTSD and a strong correlation was found between the exposure to violence and the chance of developing PTSD.

International studies have also indicated that children or adolescents exposed to violence report PTSD. Fitzpatrick and Boldizar (1993), who investigated a sample of low-income African-American youth between 7-18 years exposed to violence, found that 27.1% met the diagnostic criteria for PTSD. Similarly, Berman, Kurtines, Silverman & Serafani (1996) reported that 34.5% of the 96 high school participants in an urban setting in Miami/Dade County who were exposed to violence, met the criteria for PTSD. Most of the participants came from low-income, inner-city neighbourhoods where crime and violence are most prevalent. However, according to Osofsky (1995), there could be sources of variation in the experiencing of post-traumatic effects by children exposed to violence. The degree of disturbance or the experiencing of posttraumatic symptoms could depend on the type of violence exposure, the developmental phase of the child, the family and community context, and the availability of other family members or community support.

Pertaining to major depressive disorder (MDD) and anxiety disorder, fewer international and local studies have specifically focused on these disorders or symptoms after exposure to violence. This could be as a result of researchers only focusing on PTSD in this regard (Berman et al., 1996; Peltzer, 1999) on the one hand, or depression or anxiety could have been misdiagnosed cases of PTSD on the other (Ensink et al., 1997). Pertaining to MDD or depressive symptoms, Ensink et al. (1997) found that 6.6% of the adolescents interviewed to have been diagnosed as experiencing depressive symptoms while Ward et al. (2001) found 6.8% of the adolescents interviewed to have met the criteria for MDD. Bach (2003), in her study of 186 Venda and 151 Northern Sotho adolescents, found a significant correlation between the total exposure to violence and depression. It was also found that girls reported a higher prevalence of depression than boys. As stated, anxiety was another common psychiatric disorder or symptom children or adolescents experienced after exposure to

violence. Ward et al. (2001) indicated that 1.9% of the sample interviewed met the criteria for anxiety.

Although not as systematically studied as the internal psychological functioning, researchers have also indicated that the psychological effects of violence on adolescents may likely impact on the social and behavioural development, which is manifested in the externalising of psychological symptoms. One of the most striking consequences of exposure to community violence recently reported in both South African and American research is that direct exposure to violence could lead to an increase in hostile, aggressive, oppositional and other antisocial behaviour (Garbarino, Kostelney, Dubrow & Pardo, 1992; Osofsky, Wewers, Hann & Fick, 1994; Pillay, Naidoo & Lockhat, 1999; Van der Merwe, 2001). Van der Merwe and Dawes (2000) elaborated further by indicating that for girls, direct exposure to violence was positively related to an expression of aggression, poor self-regulation and oppositional defiant behaviour. However, there was a lack of relationship between aggression and frequency of direct experience to violence for boys. This, Van der Merwe and Dawes (2000) suggests could be due to a number of factors such as the sample characteristic, the notable wide range in reported frequency of exposure to violent events or that one is seeing a common outcome of male socialisation where the development of aggressive behaviour as a male trait is not necessarily dependent on exposure to violence (Patterson, Debaryshe & Ramsey, 1997).

In explaining the reason(s) for children's externalising of psychological symptoms such as aggressive or hostile behaviour, Osofsky et al. (1994) indicated that children could "act tough" in an attempt to counteract their anxiety, and "acting uncaring" in response to repeated loss and persistent fear. Garbarino et al. (1992) similarly report that hostile, detached, uncaring and cold behaviour is typical of post-traumatic reactions in children exposed to violence.

Another common response pattern that has emerged in children after exposure to violence is the desensitisation to violence, frequently accompanied by oppositional behaviour, impulsivity and compulsive risk-taking (Osofsky et al., 1994). In trying to explain the behaviour

of desensitisation to violence, Garbarino et al. (1994) argued that a sense of futurelessness often results, accompanied by increasing participation in dangerous activities.

The development of antisocial tendencies, specifically aggression, appears to occur not only as a result of the association between violence exposure and externalising symptoms, but also as a result of the socialisation of aggressive behaviour in high-violence communities. Fry's (1988) study of two neighbouring Zapotec Indian communities with vastly different levels of community violence attempted to determine risk factors for the development of aggressive tendencies. According to Fry (1988), patterns of aggressive behaviours are passed from one generation to the next, as children learn to engage in the kind of behaviours that are modelled and accepted by adults in their respective communities. A South African study by Lidell, Kvalsvig, Qotyana & Shabalala (1994) on the observations of the everyday patterns of play and interaction of children in two high-violence and two low-violence South African communities, support Fry's (1988) findings, indicating the predicative capacity of community violence on children's levels of aggression. Furthermore, in all the communities besides the least violent community, higher levels of contact with older, antisocial males were associated with higher levels of aggression in children (Liddell et al., 1994).

To summarise, the pathogenic approach on the psychological effects of violence on adolescents report the experiencing of posttraumatic stress disorder or symptoms, major depressive symptoms, anxiety symptoms and behavioural tendencies such as aggression. However, methodological problems regarding research conducted on the psychological effects of violence on adolescents need to be carefully considered as this could influence the quality of the research and the conclusions drawn. Firstly, it appears that researchers who have explored the area of adolescent exposure to violence has concentrated on detecting psychological symptoms, which would therefore inform treatment such as medication or other therapeutic interventions in order to alleviate or prevent mental health related problems (Strümpfer, 1990; Pretorius, 1998). A second methodological issue pertains to the incidence of exposure to violence. For example, Richters (1994) indicated that chronic exposure to violence has been identified as presenting an enduring risk to child adjustment. Unfortunately,

most South African studies have failed to differentiate between those adolescents who were exposed to a single event and those who have been chronically exposed. Thirdly, research instruments used to explore and document the psychological effects of violence on adolescents are mainly western in culture and origin. There is a concern about the reliability and validity of using a western framework to research violence in certain countries or regions (Bracken & Petty, 1998). Fourthly, research that has been conducted on the effects of child and adolescent exposure to violence is limited and the sample populations are small.

What can clearly be seen is that although there are adverse psychological effects for adolescents exposed to violence, not all adolescents necessarily succumb to psychological stressors. Some adolescents manage to remain psychologically well even in adverse conditions.

A question arising from this could be: What are the factors accounting for variations in responses to stressful life events such as exposure to violence? To explain the phenomenon of why certain individuals cope despite exposure to adverse condition, it is important to search for factors that would promote positive coping in children or adolescents. In an attempt to explain how some children or adolescents stay well, despite exposure to life stressors such as community or personal violence, an exposition of the psychofortigenic approach follows.

DEALING WITH LIFE STRESSORS: A PSYCHOFORTIGENIC APPROACH

As mentioned, not all people succumb to psychological stressors, while some manage to remain well even in adverse conditions. In an attempt explain this phenomenon, Antonovsky (1979) introduced concept of salutogenesis, which focuses primarily on the origins of health. According to the salutogenic perspective, stressors, adversity and other inordinate demands that individuals encounter are inherent to the human condition. Hence, the salutogenic perspective postulates that stressors are not necessarily bad, but that there are sources of strength through which the condition can be endured or even transcended.

Furthermore, the exposure to stressors can, for many, be propitious - stimulating continuous growth and strengthening (Strümpfer, 2001).

To think salutogenically, or to understand how people cope, Antonovsky (1987) argues that one has to see individuals on a health-ease/dis-ease continuum with all individuals falling between the two theoretical poles of total terminal illness and total wellness. The focus of a study should, therefore, be on the location of a person on the continuum of health-ease/dis-ease at any given time and to search for factors that contribute to the movement to the healthy end of the continuum.

In an attempt to explain how individuals stayed well despite exposure to adversity, Antonovsky (1987) proposed that the answer lie within his core construct of the sense of coherence. According to Antonovsky (1987) the sense of coherence can be defined as:

> *A global orientation that expresses the extent to which one has a pervasive, enduring though dynamic feeling of confidence that (1) the stimuli deriving from one's internal and external environments in the course of living are structured, predictable and explicable; (2) the resources are available to meet the demands posed by these stimuli; (3) these demands are challenges, worthy of investment and engagement (p.19).*

When one's sense of coherence is strong, stimuli from the environment can be perceived (a) as comprehensible: making cognitive sense; (b) as being manageable: under the control of both the individual and legitimate others; and (c) as being meaningful: motivationally relevant, in the form of welcome challenges that are worth engaging with and investing oneself in (Antonovsky, 1987).

According to Antonovsky (1987), the sense of coherence develops over the lifespan from early infancy to early adulthood. In the development of this disposition, child-rearing patterns, social-role complexes, idiosyncratic factors and chance are regarded as important influences.

Strümpfer (1995) argued that the concept of salutogenesis, which focuses on the origins of health, should be broadened to fortigenesis, which refers to the origins of psychological strength. To support the fortigenic perspective, Strümpfer (1995) indicated that Antonovsky struggled with a much more encompassing problem, namely the sources of

strength in general. According to Strümpfer (1995), references to 'strength' appear in many of Antonovsky's writings.

In trying to understand the mystery of health, Wissing and van Eeden (1997) suggested that a new sub-discipline of psychofortology (which refers to the science of psychological strengths) should be studies. Within this domain, Wissing and van Eeden (1997) argued that not only should the origins of psychological well-being be studied, but also the nature, manifestations, and consequently ways to enhance psychological well-being and the development of human capacities.

Within the psychofortigenic approach, Pretorius (1998) indicated that the origin of psychological strength lies in the construct of fortitude. Based on empirical research, Pretorius (1998) argued that fortitude is the strength to manage stress and stay well and this strength is derived from the appraisal of the self, the family and support from others.

A number of related Strümpfer (2001) has discussed constructs that support the emergence of the origins of psychological strength. These include hardiness (Kobasa, 1979), potency (Ben-Sira, 1985), dispositional optimism (Scheier & Carver, 1987), constructive thinking (Epstein & Meier, 1989), subjective vitality (Ryan & Frederick, 1997) and resilience. The construct of resilience has been an important focus of child and adolescent research in trying to understand how these individuals bounce back after exposure to adverse conditions (Dreyer & McGuiness, 1996; Rutter, 1995; Werner, 2000). The rest of the article will, therefore, explore the construct of resilience in children and adolescents and attempt to unravel how the psychofortigenic strength of resilience can help children or adolescents bounce back from adverse conditions and go on with their lives.

RESEARCH ON CHILDREN AND ADOLESCENT EXPOSURE TO VIOLENCE: THE CONSTRUCT OF RESILIENCE

Although there has been extensive research in the area of resilience (Garmezy, 1993; Luther & Zigler, 1991; Masten, 2001; Werner, 2000), few studies have specifically focused on

resilient factors or processes in adolescents after the exposure to violence. To understand how resilient processes operate in adolescents after the exposure to violence, it is important to focus on research that has studied adolescents in high-risk situations and who coped successfully despite exposure to severe stressors.

Resilience is generally defined as strength or good outcomes in the face of life adversity (Masten, 2001). Strümpfer (2001) elaborates on the definition of resilience and says that it is "a pattern of psychological activity which consists of a motive to be strong in the face of inordinate demands, the goal-directed behaviour of coping and rebounding (or resiling), and of accompanying emotions and cognitions" (p.15). It is dynamically influenced by both internal characteristics of the individual, and various external life contexts, circumstances and opportunities. According to Dreyer and McGuiness (1996) resilience is a process that describes how people bounce back from adversity and go on with their lives. Resilience should not be understood as the denial of difficult life experiences, pains and scars, but rather as the ability to go on in spite of such afflictions. The construct of resilience helps us to understand why one person reacts to a stressor when another person may not experience distress.

Research on resilience has focused on protective factors and mechanisms that buffer or ameliorate a child's reaction to a stressful situation or chronic adversity so that his/her adaptation is more successful than would be the case if the protective factors were not present (Garmezy, 1985; Rutter, 1985). Resilience is an end product of buffering processes that do not eliminate risks and stress but that allow the individual to deal with them effectively (Werner, 2000). Although a number of protective factors have been investigated regarding resilience in children, there appears to be a common core of individual dispositions and sources of support that contributes to individual development (Garmezy, 1993; Luther & Zigler, 1991; Werner, 2000). These protective factors appear to transcend ethnic class, social class and geographic boundaries. Three common factors, namely, individual, familial and social factors that could account for good outcomes in children or adolescents despite high rates of exposure to stressors such as violence will subsequently be explored.

A number of individual factors which could protect at-risk children from subsequent difficulties they may experience have been identified by researchers (Levy & Wall, 2000). For example, temperament, the early development of motor skills, language, self-confidence, and problem-solving abilities in children are relevant for coping and competence in later life. Regarding temperament, children who are resilient in high-risk situations, have been described as easy, good-natured, affectionate, and having the capacity for establishing positive relationships. In Werner and Smith's (1989) longitudinal study of Kauai children, about 10% of the cohort, who had experienced four or more risk factors before the age of two years, developed into competent, caring adults despite exposure to adverse conditions. The majority of these resilient boys and girls were characterised as very active, affectionate, cuddly, good-natured, and easy to deal with when they were infants. In early childhood these resilient Kauai children were described as more alert, cheerful, responsive, self-confident and independent than children of the same sex and age that developed learning or behavioural problems. Other studies that have focused on temperament support the findings of Werner and Smith (1989) where children who appeared to cope well despite exposure to severe stressors were characterised as active, affectionate, good-natured, alert and easy to deal with (Kimchi & Schaffner, 1990; Masten & Coatsworth, 1998). However, as Masten and Coatsworth (1998) indicate, the characteristic of an easy temperament may not be adaptive in all situations. In a study of Masai infants in East Africa, babies who would be viewed as difficult in temperament had better survival rates during drought in the region.

Another important factor is that of intelligence. Intellectual ability is one of the most widely investigated moderator variables in resilience research and has been shown to serve protective functions (Luther & Zigler, 1991). It appears that children who cope well in adverse situations have at least an average intelligence (Werner, 2000). Longitudinal studies of resilient children have also found that intelligence (especially communication and problem-solving skills) and scholastic competence (especially reading skills) to be positively associated with the ability to overcome adversity Block & Kremen, 1996). According to Garmezy, Masten and Tellegen (1984), bright children did not show the decline in social competence that was

demonstrated by less intelligent children when they were faced with increasing levels of stress. Other studies, however, failed to find significant interactions between intelligence and risk in predicting adjustment (White, Moffit & Silva, 1989).

According to Rutter and Quinton (1994), positive school experiences (academic and non-academic) can also serve as protective functions. Resilient children appear to enjoy school, whether nursery school, primary school or high school (Werner, 1989). Even if resilient children are not gifted, they appear to put whatever ability they have to good use.

It has been found that resilient children could make school a home away from home, a refuge from the disordered household (Werner, 2000). Resilient children reported to have had a special teacher who was not just an instructor for academic skills, but also a confidant and a role model. Studies that have explored the role of teachers as protective buffers in the lives of children who had been exposed to adversity tend to agree that teachers and mentors could have a significant positive impact on at-risk children (Freedman, 1993; Radke-Yarrow & Brown, 1993).

Internal locus of control has been found to serve as protective functions among children and adolescents (Luther & Zigler, 1991). In their longitudinal study, Werner and Smith (1982) found that resilient children had more faith in the control over their environment (reflecting an internal locus of control), as opposed to believing that the external environment was random and immutable. They had a more positive self-concept, behaved more responsibly, were achievement orientated and internalised a positive set of values. These adolescents were more nurturant, empathic, and socially perceptive than youth who had difficulty coping.

The importance of familial factors in resilience has been indicated by several studies (Garbarino et al., 1992; Rutter, 1987; Werner, 2000). Children who have been identified as resilient have had the opportunity to establish a close bond with at least one person who provided them with stable care and from whom they have received adequate and appropriate attention during the first year of life (Werner, 2000). The caregiving or attachment system is

believed to serve multiple functions beyond physical care. This includes the soothing and stimulation of emotions by the caregiver who is instrumental in helping an infant regulate emotions until he/she learns to self-regulate, as well as providing a secure base of operations for young children to explore the environment (Carlson & Sroufe, 1995). There is evidence that the quality of these special relationships has predictive significance for success in later developmental tasks, such as better problem-solving skills and better peer relationships (Masten & Coatsworth, 1998).

Longitudinal studies of competent children and adolescents, who have experienced severe adversity, strongly indicate the importance of the caregiver relationship for successful adaptation (Masten, 1994). Werner and Smith (1992) report that one of the most powerful protective factors associated with successful adaptation of high-risk children in their Kauai longitudinal study, was that of the mother's educational level and the children's exposure to a competent caregiver in the first year of life. It has been found that parents who are warm, have structured child-rearing practices such as adequate rule setting and have high expectations for their children, contribute to resilience among children at risk (Werner, 2000). Egeland, Carlson and Sroufe (1993) reported similar findings in their study of contemporary children who grew up in multi-risk families in the midst of poverty and parental psychopathology. When parents are not available, resilience could also be linked to involvement with an extended family member or a surrogate caregiver figure (Masten & Coatsworth, 1998; Werner, 2000). These could include grandparents and older siblings who could emerge as important stress buffers in the lives of many children.

Social factors that have been shown to operate in other risk situations may also serve as a buffer for children who had been exposed to a traumatic or violent event. It has been found that community institutions and members play an important role in helping children frame their explanations and cope with significant events (Levy & Wall, 2000). Garbarino et al. (1992) indicated that communities in which there are extensive social networks are able to help children believe that they are cared for and loved. Social support provided by friends, neighbours and teachers who provide structure and caring environments, could contribute to

resiliency in children. Institutions with which children come into contact, such as schools, religious organisations and community centres can potentially exert a positive influence on children (Garmezy, 1993, Masten & Coatsworth, 1998). It has been found that resilient children are skilful at choosing and identifying with resilient models and sources of support. Rather than seeking professional help, resilient children have a network of informal relationships that include friends of the same age, older friends, ministers, members of church organisations and teachers (Werner, 2000; Werner & Smith, 1982).

Several longitudinal studies have suggested that resilient children obtain a great deal of emotional support from outside the family and that they tend to rely on friends, neighbours and teachers for counsel and comfort in times of transition or crisis (Werner, 2000). Resilient children tend to be well liked by their playmates and classmates and have one or more close friends (Werner & Smith, 1992). An association with friends and the parents of friends can help resilient children gain a perspective and maintain a constructive distance between them and their own households where violence could possibly occur (Werner & Smith, 1992).

Few studies on protective factors operating in children after the exposure to violence have been conducted in South Africa. Dawes, Tredoux and Feinstein (1989) who investigated the effects on children after the violent destruction of their community, showed that children whose mothers had posttraumatic stress disorder following political violence were more likely to have symptoms of psychological distress. These mothers were less psychologically available to their children, and their capacity to give support was reduced. Youth who had been active in the political struggle of South Africa during the 1980's tended to be more resilient when they had easy temperaments and supportive early childhoods (Straker, Moosa, Becker & Nkwale, 1992). Van der Merwe (2001) who investigated adolescent exposure to community violence found that parenting attitudes were crucial in determining adolescent adjustment. She indicated that supportive parenting in particular might serve as a protective function in the lives of adolescents, moderating the association between exposure to violence and child maladjustment. Barbarin and Richter (2001) have found similar findings in their

longitudinal study of children living in the Johannesburg-Soweto metropolitan area. A strong, satisfying family life was associated with a decreased likelihood of behavioural and emotional problems and with higher levels of resilience. In the study of adolescent youth living in the Kwazulu-Natal Midlands region, Govender and Killian (2001) found that younger children were at a greater risk for the development of psychopathology in the absence of a supportive caregiver. The mediating or moderating variables that are important to consider, is that of developmental stage, age and gender of the participants.

In a more general study of resilience, Naude (2001) tried to create a profile of the characteristics of resilient children in their middle to late childhood (grades 4-7). The participating children (over 500) were randomly selected from schools in Vaalpark, Kroonstad, Potchefstroom, Bodplaas and Boksburg. The sample resembled children of all races, languages and socio-economic status in South Africa. Various questionnaires were administered in order to gather information regarding resilience. The results of the study indicated that the profile of the characteristics associated with resilience was that of external support, internal strength and social support. These findings are supportive of the protective factors that contribute to resilience in children found by other researchers (Garmezy, 1993; Luther & Zigler, 1991; Werner, 2000).

In summary, research has indicated that there are internal resources that individuals bring to his/her encounter with stressful life events; others are external sources of support in the family and community. These factors help explain why some individuals who are exposed to stressors such as violence may not necessarily succumb to it in a negative psychological manner. The psychofortignic approach and the construct of resilience further illuminate why some individuals appear to cope despite exposure to severe stressors such as violence. However, much research is needed from a South African perspective exploring resilience in order to understand the processes involved that allows certain individuals to have good outcomes despite exposure to violence.

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ARTICLE 2

A DEMOGRAPHIC STUDY OF ADOLESCENTS' EXPOSURE TO VIOLENCE IN THE WESTERN CAPE IN SOUTH AFRICA

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ABSTRACT

South Africa continues to have high levels of violence causing concern for the implications thereof. Adding to the concern is the high incidence of child and adolescent exposure to violence. Recently, there have been investigations into the prevalence of child and adolescent exposure to community violence in low socio-economic areas. The aim of the present study was to extend the exploration of the prevalence and types of exposure to violence in low socio-economic areas in the Western Cape and to examine the relationship between selected demographic variables and different types of exposure to violence. Data was collected from a sample comprising of 498 children in grade 8 to 12 (mean age-15.10 years) attending school in low socio-economic areas with high levels of violence. The adolescents completed an adapted version of the Harvard Trauma Scale. The results showed a high incidence of exposure to violence. More specifically, adolescents interviewed reported high levels of being a victim of or witness to violence perpetrated by someone known to them, as well as being a victim of or witness to violence perpetrated by a stranger. In addition, significant relationships between the various subscales and certain demographic variables, namely gender, age, grade, language and marital status of parents, were also found.

INTRODUCTION

Violence is a pervasive phenomenon occurring in the lives of many South Africans. Although recent crimes statistics report that the level of violence appears to be stabilising in South Africa, it however, remains unacceptably high when compared to other Interpol member countries (Crime Information Analysis Centre, 2001). Adding to the concern is the reported increase in violent crimes such as murder, rape, assault and robbery, especially in low socio-economic areas where unemployment is rife and resources are scarce (Gun Free South Africa Statistics, Sheet,

Facts and Figures, 2003). As a result of the high levels of violence, especially in low-socio economic areas, children and adolescents could possibly be exposed to violence directly (as victims of violence), indirectly (as witnesses) and as perpetrators of violent acts (Barbarin & Richter, 2001; Van der Merwe, 2001).

In fact, recent South African studies have indeed found that children and adolescents, who reside in low- socio economic areas, are exposed to high levels of violence. For example, Ensink, Robertson, Zissis and Ledger (1997) interviewed 60 Xhosa speaking children age 10 to 16 years in Khayelitsha of the Western Cape, and found all the participants to have indirectly been exposed to violence (i.e. witnessed violence) while 56% had experienced violence directly (i.e. being victims of violence). A perusal of the results indicate that 45% of the sample interviewed witnessed at least one killing, 35% had witnessed at least one stabbing, shooting or other violent attack and 33% had seen at least one dead body. In addition, Van der Merwe and Dawes (2000) explored the relationship between exposure to community violence and antisocial and prosocial behaviours in 78 Grade 7 children in Lavender Hill/Steenberg area of the Western Cape. Over 70% of the sample of primary school children reported direct exposure to a range of violent events such as being chased by an individual or gang, being slapped or hit, being mugged, being sexually assaulted or molested and being shot at or attacked with a knife. Furthermore, Van der Merwe (2001) interviewed a sample of 305 children age 9 to 16 years in the Lavender Hill/Steenberg area and found that 90% of the children reported having witnessed someone being physically assaulted and over 60% indicated having personally experienced between one and four violent events such as being assaulted, being chased by a gang or individual, being mugged or being stabbed with a knife.

A similar trend appears to be occurring outside of the Western Cape where high rates of children and adolescent exposure to violence have been reported. Govender and Killian (2001) investigated the relationship between the degrees of exposure to civil conflict, manifest clinical distress and coping processes in 177 black adolescents residing in the Kwazulu–Natal Midlands

region. The Negative Life Events Questionnaire (NLEQ) was administered and over 86% of the sample had seen a house being attacked or burned, over 70% witnessed violence at school and over 70% had seen people being attacked. Furthermore, 47% of the sample had witnessed a person being killed while 26% had witnessed family violence on a regular basis.

International studies have also found a high prevalence rate of exposure to violence among inner-city children and youth. For example, Bell and Jenkins (1993) conducted a survey of 500 children (age 7-15 years) living on the south side of Chicago, and explored their direct involvement in aggressive acts and witnessing of specific acts of violence. The results of the study indicated that one in four children witnessed a shooting and one in three reported that they had seen a shooting. In a study by Fitzpatrick and Boldizar (1993), high levels of exposure to violence were reported by a sample of youth residing in a public home development. Close to 85% of the respondents witnessed at least one violent act while more than 66% of the participants witnessed someone else being hit by a family member, non-family member or being beaten up or mugged. The figures for witnessing more severe acts of violence such as knife attacks, shooting or murder were also high. For example, almost 70% of the sample of youth who were investigated (N= 221) had witnessed someone getting shot or shot at and 43% had seen a murder. Similarly, Berman et al. (1996) report that over 80% of high-school children (N = 96) from low-income inner-city neighbourhoods in the greater Miami/Dade County area witnessed a violent event such as mugging or beatings and over 37% had been a victim of mugging or beating.

DEMOGRAPHIC VARIABLES RELATED TO THE EXPOSURE TO VIOLENCE

An examination of the research regarding the relationship between exposure to violence and selected demographic variables has been less systematically studied. Regarding the location of violence, it appears that most participants report that the exposure to violence occurred in the community where they lived or near the school they attended (Richters & Martinez, 1993; Ensink et al., 1997). Van der Merwe and Dawes (2000) and Van der Merwe (2001) indicate that direct and

indirect exposure to violence by the sample interviewed, occurred frequently near the home of the participants, and in unspecified locations categorised as "somewhere else" in the community. Furthermore, Govender and Killian (2001) report that the participants' experience of various forms of violence occurred in the vicinity of the community in which they resided, their homes or the school where they attended. Although the majority of children or adolescents appear to experience violence in their communities, home or school, some individuals do report being exposed to violence in jail, vigilante groups or by the security forces (Govender & Killian, 2001).

Research that has focused on the area of gender and the exposure to violence, has found that male participants were more likely to be exposed to violence directly and indirectly than females (Fitzpatrick & Boldizar, 1993; Van der Merwe & Dawes, 2000; Govender & Killian, 2001). However, Berman et al. (1996) found no significant difference with respect to gender and exposure to violence. In the sample investigated by Govender and Killian (2001), females were more prone to be victims of domestic violence. Also, females were more likely to have been victims of sexual assault (Jenkins & Bell, 1994). Although Van der Merwe and Dawes (2000) convey a concern for the direct exposure (15% of the participants) to sexual molestation, the study failed to indicate which gender reported the experience of sexual abuse.

It appears that younger participants seem to experience less negative life events as compared to older participants who are in their adolescence (Govender & Killian, 2001). International research has found conflicting results regarding the demographic variable of age and the exposure to violence. For example, Richters and Martinez (1993) found more fifth and sixth grade participants, living in low-income, moderately violent communities in the Southeast Washington DC, to report direct and indirect exposure to violence than first and second graders. However, the differences between these graders were not statistically significant. This is also reflected in a sample of 7 to 15 year old youth, where reports of witnessing violence and age of the participants were not significantly related (Bell & Jenkins, 1993). Similarly, Berman et al. (1996) found no significant effects for age and exposure to violence.

Another demographic variable that has been researched relating to children and adolescent exposure to violence is that of the living arrangements of the parents (Richters & Martinez, 1993). In the study by Fitzpatrick and Boldizar (1993), children living in households with no primary females but largely males present, were at a greater risk than other participants for witnessing and being a victim of violence.

Although the South African studies report high rates of exposure to community violence among children and adolescents, our understanding of these is limited regarding its relationship to specific demographic variables such as gender, age, language, grade and marital status of the participants' parents. Other studies have focused on a psychiatric disorder as a consequence of exposure to violence (Ensink et al., 2001). Furthermore, most studies fail to document whether exposure is repeated or chronic in nature. Chronic exposure has been reported to be an enduring risk to child adjustment (Richters, 1994). South African studies (besides Van der Merwe, 2001), fail to report the relationship of individuals to the perpetrators of violent acts. Jenkins and Bell (1994) report significant implications for its impact on children or youth that are close to individuals whose victimisation they witness. These shortcomings of current studies that have explored the prevalence of exposure to violence will be addressed in the present study.

The aim of the present study is to extend the exploration of exposure to violence, and the types of violence experienced by adolescents living in low socio economic areas of the Western Cape. In addition, the relationship between selected demographic variables and the different types of violence will also be examined. The findings will add to our body of knowledge regarding the extent and type of exposure to violence among adolescents in low socio- economic areas and stimulate research regarding possible intervention strategies needed to address current concerns.

METHOD

Participants

The sample consisted of 498 children, ages 14 to18. The majority of the sample were 'coloured' in ethnic group with only five adolescents indicating that they were 'black'. All participants attended secondary school (grades 8 to 12) in two lower socio-economic areas in the Western Cape. The specific areas were Manenberg and Hanover Park and are economically disadvantaged neighbourhoods established by the apartheid regime after forcibly removing people from their homes and relocating them to areas now known as the Cape Flats (Kinnes, 1995). These neighbourhoods are characterised by a high density of inhabitants, high-rise low cost housing developments and high unemployment. A description of the sample is presented in Table 1.

Table 1: Description of sample

Demographic variable		N	%
Gender:	Male	243	48.8
	Female	255	51.2
Age:	14	148	30.2
	15	258	52.7
	16	18	3.7
	17	21	4.3
	18	45	9.2
	Mean		15.1
	SD		1.15
Language:	English	143	28.8
	Afrikaans	349	70.2
	African	5	1.0
Grade:	8	143	28.7
	9	240	48.2
	10	45	9.0
	11	19	3.8
	12	51	10.2
Area:	Manenberg	438	88
	Hanover Park	60	12
Status of parents:	Married	278	55.8
	Divorced	53	10.6
	Separated	63	12.6
	Single	67	13.5
	Deceased	21	4.2
	Living together	16	3.2
Number of people in house:	Mean	6.3	
	SD	2.48	

The sample was relatively evenly divided between boys and girls. The mean age of the sample was 15.10 (SD = 1.15) and the majority of participants, (48.2%) were in grade 9. The participants in the other grades ranged from 28.7% in grade 6 to 10.2% in grade 12. The home language of the majority of the sample was Afrikaans (70.1%) and slightly more than half of the sample had parents who were married. The mean household size for the sample was 6.30 (SD =

2.48; Minimum = 2, Maximum 20).

Measure

Exposure to violence was assessed using the Harvard Trauma Scale (Mollica, Caspi-Yavin, Bollini, Truong, Tor & Lavelle, 1992). This scale was originally developed to assess the traumatic experiences of Indochinese refugees in the United States and focuses on both the assessment of traumatic experiences as well as the assessment of trauma symptoms. This scale was subsequently adapted for use in South Africa by focusing on violent events that are most likely to occur in South Africa (Ward, et al., 2001). Only the assessment of violent events and not the symptoms are reported in the current study. The Harvard Trauma Scale was translated into Afrikaans to accommodate the Afrikaans-speaking participants, and reverse translated into English to assess for accuracy.

In addition to the content changes, the adapted version also differed from the original in terms of response format. The original version allowed for four response categories, namely "experienced", "witnessed", "heard" or "no". The revised version only provided a dichotomous "yes" or "no" option, but different types of questions were included that allowed for the assessment of different types of exposure to violence, i.e. as witness or victim. The revised format thus allowed for the calculation of a total exposure score as well as separate scores for different categories of exposure. Questions addressing the exposure to violence were grouped into four categories, two addressing violence perpetrated by someone known to the adolescent or in the home ("known" violence), and another two addressing violence perpetrated by a stranger ("stranger" violence). One category addressed being a victim of "known" violence (16 questions) such as "Someone I know threatened to stab me". Another comprised eighteen questions related to witnessing "known" violence, including items such as "I have seen a member of my family get stabbed in my home". Nine questions addressed the adolescent's experience of being a victim of "stranger" violence, and included questions such as "I have been beaten up by a stranger". The final category comprised six questions addressing the adolescent's experience of witnessing "stranger" violence and

included questions such as "I have seen a stranger beaten up or I have seen a stranger shot".

In addition, the questionnaire also provided an opportunity to indicate whether the violent event was experienced within the last 12 months and the number of times the event occurred. The adapted version of the Harvard Trauma Scale had good test-retest reliability (Ward et al., 2001).

Procedure

The study was conducted at Senior Secondary Schools in Manenberg. Adolescents attending these schools came from the areas of Manenberg and Hanover Park on the Cape Flats, which is known for high-levels of community violence. The sample was not randomly selected but was a convenient sample obtained with the assistance of local school authorities. Questionnaires were administered class-by-class over a period of two weeks by the researcher. The duration of the administration of the questionnaires was approximately one hour and forty-five minutes. Adolescents were given a 10-minute interval. The language preference of each class determined whether questionnaires were administered in English or Afrikaans. The nature and aims of the research were described to each class, as was the content and completion requirements of the questionnaire. All questions were read aloud, and adolescents were given time after the reading of each item to respond in the space provided on their questionnaires. Adolescents were requested to wait until the reading of an item before responding, and encouraged to ask questions when an item or aspect of a question was not understood. The confidentiality of participants' responses was protected.

Data Analysis

Apart from descriptive analysis (frequencies, percentages and means) multivariate analysis of variance was used to assess the relationship between certain demographic variables and exposure to violence. The different categories of the demographic variables (e.g. male and female) were contrasted on scores on all of the subscales and the significance of these differences evaluated using multivariate (Hotelling's T^2 in the case of two groups and Pillai's Trace in the case of more than two groups) and univariate (F-test) analyses. In instances where the demographic variable consisted of more than two subgroups (e.g. age) Scheffe's post-hoc analyses were conducted to determine which group(s) differed significantly from each other.

RESULTS

The means, standard deviations and reliability coefficients (Alpha coefficient) for the total scale and subscales of the Harvard Trauma Questionnaire are indicated in Table 2.

Table 2: Means, standard deviations and reliability coefficients of Harvard Trauma Questionnaire

Scale	N items	Mean	SD	Alpha
Total scale	49	13.47	7.91	0.91
Victim of known violence	16	2.80	2.47	0.76
Witness to known violence	18	5.30	3.47	0.81
Victim of stranger violence	9	1.42	1.77	0.75
Witness to stranger violence	6	3.96	1.40	0.60

The internal reliability of the subscales is generally satisfactory with the exception of the "Witness to stranger violence" subscale, which although acceptable, is below the accepted

convention for satisfactory reliability. This is largely due to the low number of items in this subscale (6 items) since an analysis of these items indicate that their contribution to the overall reliability of the total scale equals that of the other items.

The frequency distribution of violent events and time frame for each event as well as the mean number of times each event occurred are reflected in Tables 3 to 6. Table 3 summarises the results in respect of the "Victim of known violence" subscale.

Table 3: Frequency distribution (%) of events related to "Victim of known violence" subscale

Event	% exposed to	% in last 12 months	mean no of times (min-max)
beaten up by someone known	42.0	81.4	4.63 (1-60)
beaten up by member of family	60.8	74.8	4.76 (1-40)
known person threatened to stab	19.9	79.8	1.76 (1-9)
known person threatened to shoot	11.0	72.7	2.13 (1-16)
family member threatened to stab	12.4	82.3	1.94 (1-15)
family member threatened to shoot	6.2	77.4	2.13 (1-11)
shot by known person	3.6	77.8	1.33 (1-2)
stabbed by known person	7.4	59.5	1.41 (1-3)
shot by family member	2.2	63.6	1.09 (1-2)
stabbed by family member	3.6	66.7	1.28 (1-3)
known person tried to rape	6.6	78.8	1.64 (1-7)
family member tried to rape	3.0	86.7	2.53 (1-10)
known person raped	3.0	66.7	1.67 (1-4)
family member raped	3.0	81.3	2.75 (1-10)
grown-ups hit me	39.0	81.5	9.33 (1-70)
grown-ups scream at me	55.0	88.4	15.04 (1-86)

An analysis of the results revealed that actual physical assault of the respondent by a member of the family (N =303) or by someone known to the respondent (N = 209) had the highest

incidence of violent events related to being a "victim of known violence". The extent of physical family violence is demonstrated by the incidence of physical assault (N = 303), shootings (N = 11), stabbings (N = 18), rape (N = 15) and grown-up assault (N = 194), while the threat of violence and verbal abuse is demonstrated by the incidence of shooting threats (N = 31), stabbing threats (N = 62), attempted rape (N = 15) and being screamed at (N = 274). With the exception of being beaten up by a member of the family, respondents indicated a higher incidence of being a victim of violence by someone known than by a member of the family. In general, respondents indicated that the violent events occurred largely within the last 12 months (59.5% to 88.4%). In terms of the number of times the violent event occurred, "being screamed at by grown-ups" ($\overline{X}$ = 15.04) and "being hit by grown-ups" ($\overline{X}$ = 9.33), were events with the highest frequency of repetition. The maximum number of times the respondents were victims of violence was especially high for being beaten up by someone known (maximum = 60), being beaten up by a family member (maximum = 40) and grown-ups screaming at them (maximum = 86). Attempted rape and rape perpetrated by a family member (attempted rape $\overline{X}$ = 2.53; rape $\overline{X}$ = 2.75) had a higher incidence than attempted rape ($\overline{X}$ = 1.64) or rape ($\overline{X}$ = 1.67) perpetrated by a person known to the respondent. Respondents also reported up to 7 attempted rapes by a known person, up to 10 attempted rapes by a family member, up to 4 actual rapes by a known person and up to 10 actual rapes by a family member.

Table 4 summarises the results in respect of the "Witness of known violence" subscale.

Table 4: Frequency distribution (%) of events related to "Witness of known violence" subscale

Event	% exposed to	% in last 12 months	mean no of times (min-max)
seen someone known beaten up	77.1	86.8	6.14 (1-72)
seen family member beaten up	56.4	79.0	4.02 (1-40)
seen someone known stabbed	52.2	77.8	2.81 (1-20)
seen someone known shot	46.0	79.5	2.95 (1-30)
seen family member stabbed	33.7	68.5	2.08 (1-15)
seen family member shot	19.9	70.7	2.24 (1-16)
seen dead body of family member	35.9	65.4	3.16 (1-30)
seen dead body of someone known	44.6	69.5	2.57 (1-20)
seen someone known trying suicide	18.7	62.4	1.84 (1-13)
seen family member trying suicide	10.4	63.5	2.52 (1-50)
grown-ups in home hit each other	37.6	77.5	7.12 (1-60)
grown-ups scream at each other	58.8	85.7	12.73 (1-75)
stranger stabbed in my home	6.6	60.6	2.39 (1-11)
stranger get shot in my home	4.2	76.2	1.43 (1-4)
someone known stabbed in my house	9.4	68.1	1.60 (1-11)
someone known shot in my house	4.0	75.0	2.20 (1-10)
family member stabbed in my house	11.0	69.1	1.89 (1-12)
family member shot in my home	5.0	68.0	2.04 (1-11)

The highest percentage of violent incidents perpetrated on someone known to the respondent and witnessed by the respondent appear to be related to actual physical assault: someone known beaten up (N = 384), stabbed (N = 260) or shot (N = 229); family member beaten up (N = 281), stabbed (N = 168) or grown-ups hitting each other (N = 187). In general, respondents witnessed more incidents of violence relating to someone known to the respondent than incidents relating to family members. The majority of violent events perpetrated on someone known and witnessed by the respondent occurred in the last 12 months (60.6% to 86.8%). Events

witnessed by the respondent with the highest frequency were grown-ups screaming at each other ($\overline{X}$ = 12.73), grown-ups hitting each other ($\overline{X}$ = 7.12) and seeing someone known beaten up ($\overline{X}$ = 6.14). The maximum number of times that a respondent witnessed a violent event, related to "someone known" to them. This was especially high for someone known being beaten up (maximum = 72), seen a family member beaten up (maximum = 40), seeing a family member trying to commit suicide (maximum = 50), and grown-ups hitting (maximum = 60) and screaming at each other (maximum = 75). The number of times the respondents witnessed shooting and stabbing incidents were also relatively high (maximum number was between 4 and 30 times).

Table 5 summarises the results relating to the "Victim of stranger violence" subscale.

Table 5: Frequency distribution (%) of events related to "Victim of stranger violence" subscale

Event	% exposed to	% in last 12 months	mean no of times (min-max)
beaten up by stranger	31.2	80.6	2.61 (1-17)
stranger threatened to stab me	28.6	71.8	2.08 (1-10)
stranger threatened to shoot me	15.7	72.7	2.13 (1-13)
stabbed by stranger	11.2	67.9	2.25 (1-18)
shot by stranger	3.2	75.0	1.69 (1-10)
chased by gang	38.4	73.8	2.96 (1-15)
been kidnapped	4.8	33.3	1.17 (1-3)
stranger tried to rape me	6.8	67.6	1.94 (1-13)
stranger raped me	2.0	50.0	1.40 (1-3)

Actual physical violence by a stranger (beaten up, N = 155; stabbed, N = 56; chased by gang, N = 191) and threats by a stranger (threatened to stab, N = 142; threatened to shoot, N = 78) had the highest reported incidence. Most of the reported events, with the exception of being

kidnapped, happened in the last 12 months (50% to 80.6%). All of the events occurred repeatedly, ranging from 3 times to 18 times. The highest number of repeated occurrence was for being beaten up (maximum= 17), being stabbed (maximum=18) and being chased by a gang (maximum=15).

Table 6 summarises the results relating to "Witness of stranger violence".

Table 6: Frequency distribution (%) of events related to "Witness of stranger violence" subscale

Event	% exposed to	% in last 12 months	mean no of times (min-max)
heard gunshots	97.8	93.8	18.98 (1-90)
seen stranger beaten up	86.3	89.1	9.46 (1-91)
seen stranger stabbed	70.1	78.8	3.76 (1-40)
seen stranger shot	59.4	67.9	3.52 (1-21)
seen dead body of stranger	62.4	69.9	3.65 (1-49)
seen stranger trying to commit suicide	19.3	66.7	1.91 (1-10)

The violent environment to which these children are exposed was starkly demonstrated by the incidence of stranger violence they had witnessed. The majority of the sample had been exposed to gunshots (N = 487), saw strangers being beaten up (N = 430), stabbed (N = 349) and shot (N = 296) and saw the dead body of a stranger (N = 311). The majority of these violent events were witnessed in the last 12 months (66,7% to 93,8%). The maximum number of times the respondents witnessed these violent events ranged from 10 times (seen a stranger trying to commit suicide) to 91 times (seen a stranger being beaten up).

The relationship between certain demographic variables and exposure to violence subscales are presented in Tables 7 to 11. Table 7 summarises gender differences in terms of the various violence subscales.

Table 7: Gender differences in terms of violence subscales

Subscale	Sex	Mean	Std. Deviation	F-value
Violence	Male	15.77	7.97	42.77**
	Female	11.29	7.23	
Victim known	Male	3.41	2.55	29.28**
	Female	2.24	2.24	
Witness known	Male	5.97	3.59	17.56**
	Female	4.67	3.26	
Victim stranger	Male	2.03	1.82	63.67**
	Female	0.83	1.50	
Witness stranger	Male	4.37	1.23	45.45**
	Female	3.55	1.45	

** $p < 0.01$

Multivariate analyses indicated that overall there was a significant statistical difference between males and females (Hotelling's $T^2 = 22.09$, $p < 0.01$). Univariate F-tests indicated that males and females differed statistically significant in terms of all the subscales. In general, males reported a higher incidence of being exposed to violence ($F = 42.77$, $p < 0.01$), being a victim of known violence ($F = 29.28$, $p < 0.01$), witnessing of known violence ($F = 17.56$, $p < 0.01$), being a victim of stranger violence ($F = 63.67$, $p < 0.01$) and witnessing of stranger violence ($F = 45.45$, $p < 0.01$) than females.

The results relating to age differences are reported in Table 8. Given the relatively few respondents falling into the 16, 17 and 18 year old age groups these groups were combined.

Table 8: Age differences in terms of violence subscales

Subscale	Age	Mean	Std. Deviation	F-value	Scheffe's Post hoc
Violence	14	12.22	5.85	18.73**	14 & 16-18**
	15	12.55	6.90		15 & 16-18**
	16-18	17.96	11.12		
Victim known	14	2.66	1.77	9.12**	14 & 16-18**
	15	2.53	2.11		15 & 16-18**
	16-18	3.78	3.66		
Witness known	14	4.78	3.00	14.54**	14 & 16-18**
	15	4.98	3.08		15 & 16-18**
	16-18	7.08	4.59		
Victim stranger	14	0.94	1.21	34.76**	14 & 16-18**
	15	1.20	1.49		15 & 16-18**
	16-18	2.70	2.42		
Witness stranger	14	3.84	1.22	5.48*	14 & 16-18*
	15	3.84	1.49		15 & 16-18*
	16-18	4.40	1.39		

** $p < 0.01$

* $p < 0.05$

The multivariate test (Pillai's Trace=10.09, $p < 0.01$) indicated a significant overall difference between the various age groups, and the univariate tests (F-tests) indicated that the age groups differed significantly (on the 1%-level) in terms of the total violence scale as well as all the subscales. Post hoc analyses (Scheffe's-test) indicated that the only significant differences in the case of the total violence scale as well as all the subscales were between the 14 and 16-18 year olds and the 15 and 16-18 year olds respectively. The older respondents (16-18 year olds) reported a higher incidence of exposure to violent events, being a victim of known violence,

witnessing of known violence, being a victim of stranger violence and witnessing to stranger violence than the 14 and 15 year olds.

The results relating to grade differences are reported in Table 9. Since relatively few respondents fell into the grades 10-12 these grades were combined.

Table 9: Grade differences in respect of violence subscales

Subscale	Grade	Mean	Std. Deviation	F-Value	Scheffe's Post hoc
Violence	8	12.10	5.62	13.00**	8 & 10-12**
	9	12.76	6.84		9 & 10-12**
	10-12	16.68	11.07		
Victim known	8	2.62	1.69	4.72**	8 & 10-12*
	9	2.62	2.09		9 & 10-12*
	10-12	3.42	3.65		
Witness known	8	4.81	2.98	9.09**	8 & 10-12**
	9	5.03	3.11		9 & 10-12**
	10-12	6.50	4.44		
Victim stranger	8	0.90	1.15	29.75**	8 & 10-12**
	9	1.23	1.45		9 & 10-12**
	10-12	2.45	2.48		
Witness stranger	8	3.77	1.18	5.25**	8 & 10-12**
	9	3.88	1.49		9 & 10-12*
	10-12	4.31	1.43		

** $p < 0.01$
* $p < 0.05$

Regarding grade differences in respect of exposure to violence subscales, multivariate analyses indicated a statistically significant overall difference between the various grades (Pillai's Trace = 9.10, $p < 0.01$). The univariate F-tests indicated that the grades differed significantly in respect of the total violence scale, the victim of known violence subscale, the witness of known

violence subscale, the victim of stranger violence subscale and the witness to stranger violence. Post hoc analyses indicated that these differences correspond to the differences found with regard to age, which is to be expected.

The results with regard to differences between language groups are reported in Table 10. Since there were only five students that reported their home language as African they were excluded from the analysis.

Table 10: Language differences in respect of violence subscales

Subscale	Language	Mean	Std. Deviation	F-value
Violence	English	11.77	7.85	8.86**
	Afrikaans	14.08	7.74	
Victim known	English	2.27	2.38	8.87**
	Afrikaans	2.99	2.45	
Witness known	English	4.44	3.34	12.15**
	Afrikaans	5.62	3.44	
Victim stranger	English	1.37	1.78	0.07
	Afrikaans	1.41	1.75	
Witness stranger	English	3.70	1.55	6.59*
	Afrikaans	4.05	1.31	

** $p < 0.01$

* $p < 0.05$

From Table 10, it is clear that multivariate analyses indicated an overall significant statistical difference between the various language groups (Hotelling's $T^2 = 6.94$, $p < 0.01$). Furthermore, the univariate F-tests indicated that the language groups differed in terms of the total violence scale as well as all the subscales, with the exception of the victim of stranger violence subscale. The results indicated that the Afrikaans speaking children reported a higher incidence of violence, being a victim and witness of known violence and being a witness of stranger violence than the English

speaking children.

The results relating to the relationship between marital status of parents and violence subscales are reported in Table 11. To have more meaningful subgroups for analysis, parents status was reclassified as "together" (married and living together), "separated" (divorced and separated) and "single".

Table 11: The relationship between marital status of parents and violence subscales

Subscale	Parents	Mean	Std. Deviation	F-value	Scheffe's Post hoc
Violence	Parents together	12.87	7.20	10.13**	together & separated**
	Parents separated	16.24	9.68		single and separated**
	Single	11.60	6.20		
Victim known	Parents together	2.59	2.19	7.99**	together & separated**
	Parents separated	3.59	3.18		single & separated**
	Single	2.43	1.79		
Witness known	Parents together	5.03	3.21	10.11**	together & separated
	Parents separated	6.51	4.14		single & separated**
	Single	4.46	2.89		
Victim stranger	Parents together	1.33	1.68	5.55*	together & separated*
	Parents separated	1.88	2.10		single & separated*
	Single	1.09	1.32		
Witness stranger	Parents together	3.92	1.39	4.81**	single & separated*
	Parents separated	4.26	1.31		
	Single	3.62	1.49		

**$p < 0.01$

*$p < 0.05$

In respect to the various categories of marital status, multivariate analyses indicated an overall significant statistical difference (Pillai's Trace = 2.88, $p < 0.01$). The univariate F-tests

indicated that the groups differed in terms of the total violence scale as well as all the subscales. Post hoc analyses indicated that children whose parents were separated reported significantly higher incidences of total violence being a victim of known violence, being a witness to known violence, being a victim of stranger violence and being a witness to stranger violence than children whose parents were married or single.

DISCUSSION

There is considerable concern in the literature regarding adolescent exposure to violence and the implications thereof. The present study set out to investigate the prevalence of adolescent exposure to violence in low socio-economic areas in Manenberg and Hanover Park in the Western Cape, and to examine the relationship between selected demographic variables and the different types of violence experienced. The participants were administered a modified version of the Harvard Trauma Scale (Mollica et al., 1992).

The results of the current study demonstrated that adolescents, living in low socio-economic areas such as Manenberg and Hanover Park, report a high degree of direct and indirect exposure to violence. These findings, in conjunction with national research (Ensink et al., 1997; van der Merwe and Dawes, 2000) and international research (Fitzpatrick & Boldizar, 1993; Berman et al., 1996; Moses, 1999) suggests that the probability of direct exposure to violence either as a victim (i.e. violence perpetrated by someone known to them or violence in the home) or as a witness (for e.g. witnessing physical assault by a person known to the participant) appears to be high among adolescents residing in low socio-economic areas.

However, researchers have used different methodologies and measuring instruments to assess adolescents exposure to violence whether directly or as a witness. For example, Ensink et al. (1997) and van der Merwe and Dawes (2000) used a shortened version of the Survey of Exposure to Community Violence (SECV). The SECV consists of 12 items describing a range of violent events. Ward et al. (2001) and the present researcher used an adapted version of the

Harvard Trauma Scale to address violence that is most likely to occur in South Africa. Although the researchers report high rates of exposure to violence, comparisons are difficult to make as most researchers, including the present researcher, deviated from the standard procedures. Furthermore, what makes comparisons difficult in the present study is that exposure to violence has mostly been researched among population groups who live in low socio-economic areas and where community violence is rife. It is important to gather information about the exposure to violence among other ethnic and socio-economic groups in order to make comparisons about what is high and what is low in reporting of the incidents of violence. What needs clarification is whether individuals from different ethnic groups or socio-economic status experience different types of violence, their relationship to the perpetrator and the kinds of symptoms that they could experience.

The use of the Harvard Trauma Scale by Ward et al. (2001) categorised the witnessing of violence into four categories viz., that of being a victim or witness of 'known' violence and that of being a victim or witness to 'stranger' violence. The question that needs asking is whether these are the only forms of violence that adolescents can be exposed too? Adolescents are frequently exposed to the media, television and the internet which could portray forms of violence. These forms of violence need to be taken into account as it could affect the perception of adolescents.

The present researcher, although using the same categories as Ward et al. (2001), also investigated the frequency of witnessing violence in the past year and found that the majority of the participants experienced the exposure to violence in the past year. Although the present study did not investigate the reason(s) for the increase in exposure to violence in the past year, it could be that the majority of participants were in grade 9 and in the beginning phase of their adolescence. As the majority of the participants completed one year of secondary school, it could be hypothesised that the transition from primary to secondary school could expose one to more violence as one is less protected. It is important that future studies investigate the reasons as to why adolescents could experience more violence in the past year than in previous years. What could aid in the understanding as to why adolescents report more exposure to violence in the past

year is to conduct semi-structured interviews with some adolescents who could qualitatively expand on some of the results.

The common forms of violence that adolescents are exposed to (regardless of whether exposure was direct or indirect or whether the participants knew the perpetrator or not) are: Being a victim or witness to physical assault, being a victim or witness to screaming at each other in the home, being a victim or witness to being beaten up, being a victim or witness to stabbing, and being a victim or witness to rape or attempted rape. Other studies which have explored the forms of violence that adolescents could be exposed to have also reported similar results (Ensink et al., 1997; Seedat, et al., 2000; Van der Merwe & Dawes, 2000). It is a clear indication that adolescents are exposed to a range of forms of violence whether in the home, or outside in the community. However, the administration of a questionnaire concerning forms of violence only gives an indicator as to what adolescents could possibly be exposed to. A semi-structured interview with some of the participants could have been of value in understanding what kind of physical assault took place or what kind of rape adolescents could have experienced.

There was a significant difference between males and females regarding the exposure to violence. The results indicated that males reported a higher incidence of exposure to violence on all the subscales. These findings are supported by Van der Merwe and Dawes (2000) and Govender and Killan (2001) who also reported that the male participants were more likely than women participants to be exposed to direct and indirect violence in low socio-economic areas. However, international research has found that violence could vary by gender or type of exposure. Girls were more likely to be victims of sexual assault (Jenkins & Bell, 1994), while boys reported greater personal victimisation in other areas such as shootings, stabbings and assault (Richters & Martinez, 1993; Fitzpatrick & Boldizar, 1993; Jenkins & Bell, 1994). A possible explanation for the gender difference could be due to differential socialisation where boys are more likely than girls to be exposed to, and participate in aggressive acts.

The results of the present study suggest that adolescents who spoke Afrikaans as a language, reported a higher incidence of exposure to violence, being a victim and witness of 'known' violence and being a witness of stranger violence than English speaking children. It could be said that the majority of the sample of adolescents investigated spoke Afrikaans (70.1%), which could account as to why Afrikaans speaking children reported a higher incidence of exposure to violence. Furthermore, the majority of the adolescents were 'coloured' in ethnic group and attended schools on the Cape Flats in Manenberg and Hanover Park. Th majority of the 'coloured' people who reside on Cape Flats such as Manenberg and Hanover Park has Afrikaans as their first language. It would be important for further studies to reflect on whether children who spoke English, Afrikaans or an African language differ in the exposure to violence and the type of violence experienced. As the present study only investigated on one specific ethnic group, comparisons are, therefore, difficult to make. Cross-cultural research would be valuable in investigating exposure to violence among different ethnic groups and those who spoke different languages.

An interesting finding of the results is that adolescents whose parents were separated reported a significantly higher incidence of total violence as well as being a victim of "known" violence than children whose parents are married or single. It could be that adolescents whose parents are separated, have been exposed to more violent events in the home. As discussed in the analysis of the results, adolescents report a high incidents physical assault, grown up assault, being screamed at and being beaten up in the family. It could be argued that adolescents who are exposed to violence in the home may put themselves at risk for experiencing community violence by avoiding the home and so too, invite further exposure to violence (Ward et al., 2001). However, very little research has focused on comparing adolescents who reside with both parents with that of adolescents whose parents are separated. It appears that exposure to possible marital conflict may lead to adolescents avoiding the home and, thereby, encountering other forms of violence. This hypothesis needs to be further explored.

Regarding age and grade, the present findings suggests that the 16-18 year-old group

reported a higher incidence of exposure to violence on all subscales than the 14-15 year-olds. Support for the present findings is found in the study of Govender and Killian (2001) who indicated that the older the participant, the more likely they were to experience negative life events such as exposure to violence. According to Govender and Killian (2001) younger children seem to have been relatively protected from the forefront of activities. It could also be speculated that older adolescents have become more accustomed to violence and so did not experience the same kind of distress. International research appears to indicate that no significant difference were found regarding age and grade in adolescent exposure to violence (Fitzpatrick & Boldizar, 1993; Berman et al., 1996). It could be postulated that the reason for these differences in national and international research is that in American research, the children who live in high-violence neighbourhoods could experience violence from a very early age and that violence is such a pervasive phenomenon.

CONCLUSION AND RECOMMENDATIONS

The results of the present study clearly indicate that adolescents residing in areas such as Manenberg and Hanover Park in the Western Cape, report high levels of exposure to various forms of violence directly and indirectly. As indicated in a previous article, chronic exposure to violence is a concern for mental health related problems (Richters, 1994).

The present study only reported on the exposure to violence and certain demographic variables. However, an investigation into the relationship between the type of violence experienced, the relationship that the witness has to the perpetrator and the impact of violence and the type of symptoms experienced would be of greater value.

As the research group was small and focused on one ethnic group, generalisations could not be made readily and the results should be interpreted with caution. Cross-cultural research including the various ethnic groups in South Africa would be valuable with regard to exploring the types of violence that adolescents are exposed to. In order to make comparisons, research also

needs to investigate the exposure to violence among different socio-economic groups as the type and form of violence could possibly differ. Furthermore, the present study only used the Harvard Trauma Scale in investigating exposure to violence. An improvement would be to ascertain what other forms of violence adolescents could experience and incorporate it into the research. Furthermore, future research should control and investigate mediating and moderating variables such as age of the participants, ethnic groups, language, selected areas of residents or school and the kinds of questionnaires administered in order to make comparisons.

The present article focused on the prevalence of adolescents' exposure to violence and its relationship to certain demographic variables. In the next article the impact of exposure to violence and the protective and resilient factors that might buffer the impact of this exposure to violence will be explored.

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ARTICLE 3

THE HEALTH-SUSTAINING AND STRESS-REDUCING ROLES OF FORTITUDE AND THE SUBJECTIVE EXPERIENCE OF SAFETY IN ADOLESCENTS EXPOSED TO VIOLENCE

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THE HEALTH-SUSTAINING AND STRESS-REDUCING ROLES OF FORTITUDE AND THE SUBJECTIVE EXPERIENCE OF SAFETY IN ADOLESCENTS EXPOSED TO VIOLENCE

ABSTRACT

The aim of this study is to investigate the relationship between exposure to violence and trauma-related symptoms, and to explore the health-sustaining and stress-reducing roles of fortitude and subjective sense of safety in adolescents. Data was collected from a sample comprising 498 adolescents in grade 8-12 (mean age 15.10 years) attending school in low socio-economic areas with high levels of violence. The adolescents completed an adapted version of the Harvard Trauma Scale, the Fortitude Questionnaire (FORQ), and the Safety Index. The results suggest a significant positive relationship between all the violence subscales and the trauma-related symptoms. Moderated regression analyses indicated direct effects for fortitude on trauma-related symptoms, which implies that the effect of a third variable (e.g. fortitude) on well-being is independent of the level of exposure to violence. In addition, moderated regression analyses showed moderating effects for fortitude in respect to the impact of witnessing stranger violence in affecting psychological adjustment. Furthermore, moderated regression analyses indicated direct effects for sense of safety but no significant moderating effects.

INTRODUCTION

The impact of violence continues to reverberate in the lives of many South Africans. As mentioned before, adolescents report a high rate of exposure to violence nationally and internationally (Bell & Jenkins, 1993; Ensink, Robertson, Zissis & Ledger, 1997; Fitzpatrick & Boldizar, 1993; Moses, 1999; Van der Merwe & Dawes, 2000; Van der Merwe, 2001). Furthermore, as indicated in the previous article, adolescents who are exposed to violence report experiencing being a victim of or witness to violence that is perpetrated by someone known to them as well as being a victim of and witness to violence perpetrated by a stranger.

This implies that adolescents not only experience high level of violence in their homes, but also in their communities.

The high rate of exposure to violence and its possible psychological ramifications has become a concern for mental health workers (Ensink et al., 1997; Ward, Flisher, Zissis, Muller & Lombard, 2001). As discussed in article one, research on the impact of adolescent exposure to violence have indeed indicated the presence of psychological symptoms including posttraumatic stress disorder (PTSD) (Bach, 2003; Ensink et al., 1997; Peltzer, 1999; Seedat, van Nood, Vythilingum, Stein & Kramer, 2000; Ward et al., 2001), depression (Bach, 2003; Ensink et al., 1997) and anxiety (Ward et al., 2001). Furthermore, exposure to violence could lead to an increase in aggression, oppositional, and antisocial behaviour in adolescents (Pillay, Naidoo & Lockhat, 1999; Van der Merwe & Dawes, 2000).

Regarding the manifestation of PTSD, findings suggest that the percentage range varies between 5% and 42.7% (Bach, 2003; Ensink et al., 1997; Peltzer, 1999; Seedat et al., 2000; Ward et al., 2001) among the samples investigated. Pertaining to depression, research indicated that the percentage range appears to be at about 6% (Ensink et al., 1997; Ward et al., 2001), while just over 1% of adolescents investigated report anxiety symptoms (Ward et al., 2001).

However, an exploration of the studies that have investigated adolescents' exposure to violence indicates that not all the participants succumb to psychological distress. As a matter of fact, Richters (1994) and Osofsky (1995, 1997) suggest that posttraumatic effects in adolescents exposed to community violence may vary according to the quality of care provided at a familial level, the availability of social support structures and the nature of the violence exposure. As a result of mediating and moderating variables, it appears that some individuals tend to cope even in adverse conditions.

The question would be: What is it that allows certain individuals to remain well and able to cope despite exposure to high levels of community violence? In order to understand the

phenomenon, a possible approach is to explore research that has investigated protective factors that could buffer or strengthen children and adolescents' psychological response to violence.

THE ORIGINS OF PSYCHOLOGICAL STRENGTHS

As mentioned in article one, to understand how certain individuals manage stress and remain well, Antonovsky (1979) emphasised that what should be investigated is the origins of health or wellness and introduced the concept of "salutogenesis", from the Latin "salus" (health) and the Greek "genesis" (origins). Salutogenesis focuses on positive health (i.e. not simply the absence of disease) and is primarily concerned with the maintenance and enhancement of wellness. To think salutogenically, would be to search for factors that could contribute towards coping, positive health and wellness.

According to Antonovsky (1979) the crucial concept in understanding how people manage stress and stay well is the sense of coherence. Sense of coherence is a dispositional orientation that is presumed to engender, sustain and enhance health. The concept of sense of coherence forms the core construct of salutogenesis and consists of three elements, namely, comprehensibility, manageability and meaningfulness. Antonovsky (1987) sees sense of coherence as developing over the lifespan from infancy to early adulthood. In the development of this disposition, child-rearing patterns, social-role complexes, idiosyncratic factors and chance are regarded as important influences.

Strümpfer (1995) argued that Antonovsky's concept of salutogenesis should be replaced by the more holistic and broader explanatory construct of fortigenesis, referring to the origins of psychological strength (Latin "fortis" = strong). In developing the argument for fortigenesis, Strümpfer (1995) indicated that reference to 'strength' appeared in many of Antonovsky's writings where he began asking the question, 'Where's the strength?' (Antonovsky, 1979, p.7). According to Strümpfer (1995), the construct of fortigenesis reflects a particular philosophy of life where the focus is on understanding why and how some people find the strength to

withstand and overcome stressors, whereas others do not, is also likely to lead to ways of increasing the numbers of those who do.

Pretorius (1998) indicated that a possible answer to the question of "where's the strength" lies in the construct of fortitude and defined it as 'the strength to manage stress and stay well and this strength derives from an appraisal of the self, the family and support from others' (p.23). According to Pretorius (1998), our countless experiences with the world allow us to develop general beliefs about ourselves, and our world. People's evaluations of themselves, their abilities, support resources and their family environment influence their emotions and behaviour during interactions with the environment. Those who perceive themselves, their support and their environment negatively will have serious doubts about their ability to deal with stressful encounters and could consequently succumb to possible psychological effects. Those who perceive themselves, their support and their environment positively will have a greater belief in their ability to manage stressful encounters. A number of studies have identified variables that could influence the relationship of negative environmental conditions and physical and psychological well-being viz., social support (Pretorius, 1996), appraisal of problem solving abilities and stress-depression reactions (Pretorius & Diedericks, 1994) and sense of safety (Ward et al., 2001).

The possible role that fortitude and subjective sense of safety could play on the sequelae of adolescents after the exposure to violence is that of a health-sustaining (direct effect) and stress reducing (buffering effect) function. The direct effect postulates that high levels of fortitude will result in an increase in physical and psychological well-being, irrespective of the level of stress. The buffering hypothesis suggests that at low levels of fortitude, the relationship between stress and psychological well-being is strong and direct (that is, high stress levels are associated with low levels of psychological well-being). However, as fortitude increases the relationship should weaken (Pretorius, 1998).

Empirical support has been found for the presumed role that fortitude could play in helping people to maintain positive psychological health or well-being. In a study comprising of 460 undergraduate psychology students at the University of the Western Cape, respondents with high levels of fortitude reported significantly higher levels of life satisfaction, positive affect and subjective well-being than respondents with low levels of fortitude. Furthermore, a stress-resistant group (high levels of stress and high levels of well-being) reported experiencing high levels of fortitude compared to a stress-troubled group (high levels of stress and low levels of well-being) (Pretorius, 1998). In addition Heyns, et al. (2003) reported that a negative correlation occurred between burnout and psychofortigenic factors, such as fortitude, in a sample comprising 221 nursing staff at institutions where patients with Alzheimer's disease were hospitalised. It was found that burnout amongst nurses were neutralised by fortitude, enabling the nurses to evaluate their own strengths to handle stress and to meet the demands of the situation.

The aim of the present study is to investigate the relationship between violence exposure and trauma-related symptoms such as PTSD in adolescents residing in low socio-economic areas on the Cape Flats of the Western Cape. Furthermore, the present study will extend the exploration of the health-sustaining and stress-reducing roles of fortitude and the subjective sense of safety in adolescents after the exposure to violence. The findings will add to our body of knowledge regarding the exposure to violence and its relationship to trauma-related symptoms among adolescents. Furthermore, the aim of the study is to stimulate research regarding the possible role psychofortigenic factors could play in contributing to the well-being of individuals and to search for ways of enhancing these factors in communities at risk.

METHOD

Participants

The participants consisted of 498 adolescents between the ages of 14 and 18 years. Most of the sample consisted of 'coloured' adolescents with only 5 indicating that they were

'black'. All participants attended senior secondary school (grade 8-12) in areas such as Manenberg and Hanover Park. These are economically disadvantaged neighbourhoods established by the apartheid regime after forcibly removing people from their homes and relocating them to areas now known as the Cape Flats (Kinnes, 1995). These neighbourhoods are characterised by a high density of inhabitants, high-rise low cost housing developments and high unemployment. A description of the sample is presented in Table 1.

Table 1: Description of sample

Demographic		N	%
Gender:	Male	243	48.8
	Female	255	51.2
Age:	14	148	30.2
	15	258	52.7
	16	18	3.7
	17	21	4.3
	18	45	9.2
	Mean		15.1
	SD		1.15
Language:	English	143	28.8
	Afrikaans	349	70.2
	African	5	1.0
Grade:	8	143	28.7
	9	240	48.2
	10	45	9.0
	11	19	3.8
	12	51	10.2
Area:	Manenberg	438	88
	Hanover Park	60	12
Status pf parents:	Married	278	55.8
	Divorced	53	10.6
	Separated	63	12.6
	Single	67	13.5
	Deceased	21	4.2
	Living together	16	3.2
Number of people in house:	Mean	6.3	
	SD	2.48	

The sample was relatively evenly divided between boys and girls. The mean age of the participants was 15.10 (SD = 1.15) and the majority of participants were in grade 9. The home language of the majority of the sample was Afrikaans speaking (70.1%). Slightly more than half of the participants had parents who were married. The mean household size for the sample was 6.30 (SD = 2.48; Minimum = 2, Maximum 20).

Measures

The assessment techniques were the Harvard Trauma Scale (Mollica, Caspi-Yavin, Bollini, Troung, Tor & Lavelle, 1992), the Fortitude Questionnaire (FORQ) (Pretorius, 1998) and the Safety Index (Ward et al., 2001).

The Harvard Trauma Scale

The Harvard Trauma Scale was used to assess adolescent exposure to violence and symptoms of trauma. This scale was originally developed to assess the traumatic experiences of Indochinese refugees in the United States. This scale was adapted slightly to address violence that is most likely to occur in South Africa (Ward et al., 2001). The first section of the Harvard Trauma Scale consists of 49 questions focusing on a variety of violent events. In addition to the content changes, the adapted version of this first section also differed from the original in terms of format. The original version allowed for four response categories, namely "experienced", "witnessed", "heard" or "no". The revised version only provided a dichotomous "yes" or "no" option, but different types of questions were included that allowed for the assessment of different types of exposure to violence (i.e. as witness or victim). The revised format thus allows for the calculation of a total exposure score as well as separate scores for four different categories of exposure. The categories of exposure to violence are 1) having been a victim of known violence where the participant knew the perpetrator who tried to inflict harm such as 'Someone I know threatened to stab me'; 2) having been a witness to known violence where the participant has seen someone he/she knew which was threatened or stabbed; 3) having been a victim of stranger violence such as having been beaten up by a stranger; 4)

witnessing stranger violence where the participant saw a stranger getting stabbed. In addition, the questionnaire also provided opportunity to indicate whether the violent event was experienced within the last 12 months and the number of times the event occurred.

The second part of the Harvard Trauma Scale consists of 30 symptom questions. The first 16 questions were derived from the DSM-III-R criteria for posttraumatic stress disorder and the remaining fourteen questions described additional symptoms that may result from traumatic events but are not required for diagnosis. Examples of the remaining 14 questions are "blaming yourself for things that happened", "hopelessness" and "feeling that you have no one to rely on". This section of the scale provided four response options ranging form "not at all" to "extremely". A total score reflecting the severity of trauma-related symptoms are obtained by summing the responses to the 30 questions. The Harvard Trauma Scale showed good test-retest reliability for exposure to violence and fair test-retest reliability for items dealing with symptoms (Ward et al., 2001).

The Fortitude Questionnaire (FORQ)

Fortitude was measured using the Fortitude Questionnaire (FORQ) (Pretorius, 1998). This instrument was designed to measure the strength to manage stress and stay well. It consists of 20 items and uses a four-point scale ranging from "does not apply" to "applies very strongly". These twenty items measure three domains, namely self-appraisals, family-appraisals and support-appraisals. The sum of the three domains represents fortitude. In the initial validation study the author reported reliability coefficients ranging from 0.74 to 0.85. The content validity of the FORQ was assured through the process of item selection, while both exploratory as well as confirmatory factor analyses supported the three-factor structure of the FORQ. The FORQ also correlated with measures of psychological distress as well as with measures of self-esteem, social support and family environment. In sum, the FORQ demonstrated adequate reliability and validity. Additional support for the reliability and validity of the FORQ were reported by Heyns et al. (2003) who indicated reliability coefficients of 0.86 for an Afrikaans

sample and 0.88 for an English sample. A number of unpublished doctoral and master's theses, for example Koen (2002) and Roothman (2001), have also confirmed the psychometric properties of the FORQ.

Safety Index

As indicated earlier, the safety Index was constructed to measure adolescent's subjective sense of safety and consists of four questions about feelings of safety at school, home, away from home and with one's family (Ward et al., 2001). The responses to the questions were made on a four-point scale ranging from "always" to "not at all". The authors do not report any reliability data for this measure.

All measures used, namely the Harvard Trauma Scale, the FORQ and the safety index were translated into Afrikaans to accommodate the Afrikaans-speaking participants and reverse translated into English to assess for accuracy.

Procedure

The study was conducted at Senior Secondary Schools in Manenberg. Adolescents attending these schools came from the areas of Manenberg and Hanover Park on the Cape Flats, which is known for high levels of community violence. The sample was not randomly selected but was a convenient sample obtained with the assistance of local school authorities. Questionnaires were administered class-by-class over a period of two weeks by the present researcher. The duration of the administration of the questionnaires was approximately one hour and forty-five minutes. Adolescents were given a 10-minute interval. The language preference of each class determined whether questionnaires were administered in English or Afrikaans. The nature and aims of the research were described to each class, as was the content and completion requirements of the questionnaire. All questions were read aloud, and adolescents were given time after the reading of each item to respond in the space provided on their questionnaires. Adolescents were requested to wait until the reading of an item before

responding, and encouraged to ask questions when an item was not understood. The confidentiality of participants' responses was protected as was practically possible.

Analysis of data

To examine the direct and moderating effects of fortitude and subjective sense of safety, moderated regression analyses (Arnold, 1972; Cohen & Cohen, 1975) were performed. In moderated regression analyses the psychological outcome (in this instance, trauma symptomatology) is used as the dependent variable in a two-step regression analysis. The scores of the adverse condition (exposure to violence) and the presumed moderating variable (fortitude and sense of safety respectively) are entered together in the regression equation in Step 1, while an interaction term (the product of fortitude or safety and the various violence subscales) is entered in Step 2. To avoid the problem of multicollinearity, the deviation scores (score minus mean) of the adverse condition and the presumed moderating variable are used in the calculation of the product term (Baron & Kenny, 1986; Dunlap & Kemery, 1987). A significant effect for fortitude (or safety) in Step 1 indicates a direct effect for fortitude, i.e. a health-sustaining effect. A significant effect for the product term in Step 2 indicates that fortitude (or safety) has a moderating effect.

RESULTS

The means, standard deviations and reliability coefficients (Alpha coefficients) for the scales (and subscales) used are reported in Table 2 for the total sample.

Table 2: Means, standard deviations and reliability coefficients of measures

Scale	N Items	Mean	SD	Alpha
Total Violence	49	13.47	7.91	0.91
Victim of known violence	16	2.80	2.47	0.76
Witness to known violence	18	5.30	3.47	0.81
Victim of stranger violence	9	1.42	1.77	0.75
Witness to stranger violence	6	3.96	1.40	0.60
Traumatic Symptoms	30	54.01	18.45	0.94
Fortitude	20	55.26	9.15	0.76
Safety Index	4	13.17	2.47	0.61

The internal reliability of all the scales is generally satisfactory with the exception of the "Witness to stranger violence" subscale and the Safety Index which, although acceptable, is below the accepted convention for satisfactory reliability. This is largely due to the low number of items in these two scales and conclusions and results based on these two scales should be viewed with some caution.

The intercorrelations between the various scales are reported in Table 3.

Table 3: Intercorrelations between violence subscales, subjective sense of safety, fortitude and trauma symptomatology

	Violence	Victim known	Witness known	Victim stranger	Witness stranger	Fortitude	Safety	Trauma symptoms
Violence	1	.87**	.93**	.85**	.73**	-.24**	-.26**	.60**
Victim known		1	.72**	.74**	.46**	-.21**	-.23**	.56**
Witness known			1	.68**	.66**	-.22**	-.23**	.54**
Victim stranger				1	.52**	-.24**	-.29**	.55**
Witness stranger					1	-.16**	-.14**	.36**
Fortitude						1	.17**	-.24**
Safety							1	-.29**
Trauma symptoms								1

**p<0.01

Table 3 indicated that there is a significant positive relationship between all of the violence subscales and the trauma-related symptoms. This implies that an increase in exposure to violence is significantly associated with an increase in trauma-related symptoms. Fortitude and sense of safety, on the other hand, is significantly negatively related to trauma-related symptoms, indicating that higher levels of fortitude and sense of safety are associated with lower levels of trauma-related symptoms.

The results of the moderated regression analyses are indicated in Tables 4 (fortitude) and 5 (sense of safety).

Table 4: Moderated regression analyses with fortitude and violence as predictor variables and trauma symptoms as dependent variable

Predictor	df	t	Cum R^2	Beta
Total Violence	1.484	15.52**	.36	.58
Fortitude	1.484	-2.92**	.37	-.11
----------[a]				
Fortitude X Violence	1.483	-0.79	.37	-.03
Victim known	1.488	14.50**	.33	.54
Fortitude	1.488	-3.64**	.34	-.14
----------[a]				
Fortitude X Victim known	1.483	0.03	.34	.01
Witness known	1.489	13.07**	.29	.51
Fortitude	1.489	-3.48**	.30	-.14
----------[a]				
Fortitude X Witness known	1.488	-1.89	.30	-.07
Victim Stranger	1.488	13.74**	.31	.53
Fortitude	1.488	-3.10**	.32	-.12
----------[a]				
Fortitude X Victim Stranger	1.487	-0.10	.32	-0.01
Witness Stranger	1.489	7.91**	.13	.33
Fortitude	1.489	-4.57**	.17	-.19
----------[a]				
Fortitude X Witness Stranger	1.488	-2.76**	.18	-.11

[a] Represents different steps in regression analyses
**p<0.01

The moderated regression analyses in Table 4 indicate a significant direct effect for fortitude on trauma-related symptoms when considered together with all the violence subscales. This would imply a health-sustaining role for fortitude in respect of trauma-related symptoms. The health-sustaining role postulates that effects of the third variable (e.g. fortitude) on well-being are independent of the level of the negative environmental condition. In an extreme version, the health-sustaining model hypothesises that an increase in the level of fortitude will result in an increase in well-being, irrespective of the level of stress. In addition, the product-term of fortitude and witness to stranger violence was also significant. This would imply a stress-buffering role for fortitude in respect of the impact of witness to stranger violence on trauma-

related symptoms. This means that fortitude could interact with stress in affecting psychological adjustment. The stress-buffering hypothesis would predict that at low levels of fortitude, the relationship between witnessing stranger violence and psychological well-being should be strong and direct (that is, high levels of witnessing stranger violence is associated with low levels of psychological well-being), and as fortitude increases the relation should weaken. The exact nature of the interaction/moderating effect can be established by comparing the regression lines of adolescents low on fortitude with adolescents high on fortitude. Following the procedure suggested by Cohen and Cohen (1975), two different regression lines were computed – one for those adolescents high in fortitude (at or above the 75th percentile, N=138) and one for those low in fortitude (at or below the 25th percentile, N=125). The graph for adolescents high and low in fortitude, in respect of the relationship between witness to stranger violence and trauma-related symptoms, are shown in Figure 1.

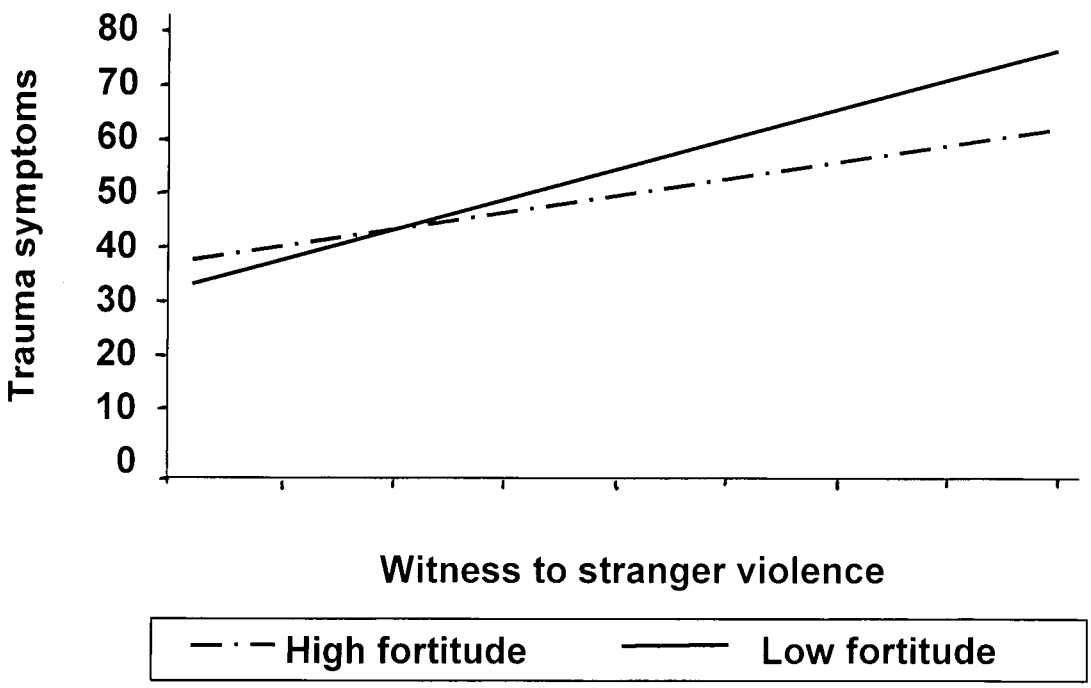

Figure 1: Regression of trauma symptoms on witness to stranger violence for high and low fortitude

The regression line for adolescents low in fortitude was much steeper (slope = 6.00) than the regression line of those high in fortitude (slope = 3.08). This indicates that an increase in exposure to stranger violence is more strongly associated with an increase in trauma symptoms for adolescents low in fortitude than for those high in fortitude.

The moderated regression analyses in respect of sense of safety are reported in Table 5.

Table 5: Moderated regression analyses with sense of safety and violence as predictor variables and trauma symptoms as dependent variable

Predictor	df	t	Cum R^2	Beta
Total Violence	1.489	15.15**	.36	.56
Safety	1.489	-4.01**	.38	-.15
----------[a]				
Safety X Violence	1.488	0.01	.38	-.00
Victim known	1.493	13.84**	.31	.52
Safety	1.493	-4.65**	.34	-.18
----------[a]				
Safety X Victim known	1.492	0.02	.34	.02
Witness known	1.494	12.96**	.29	.49
Safety	1.494	-4.71**	.32	-.18
----------[a]				
Safety X Witness known	1.493	-0.90	.32	-.04
Victim Stranger	1.493	13.10**	.30	.51
Safety	1.493	-3.80**	.32	-.15
----------[a]				
Safety X Victim Stranger	1.492	-0.90	.32	-0.04
Witness Stranger	1.494	8.05**	.13	.33
Safety	1.494	-6.06**	.19	-.25
----------[a]				
Safety X Witness Stranger	1.493	-1.80	.20	-.08

[a] Represents different steps in regression analyses
** $p<0.01$

The moderated regression analyses indicated significant direct effects for sense of safety on trauma-related symptoms when considered together with all the violence subscales. This

suggests a health-sustaining role for sense of safety. There were no significant moderating effects for sense of safety.

DISCUSSION

The present study set out to investigate the relationship between exposure to violence and certain trauma-related symptoms. In addition, it examined the health-sustaining and stress-reducing roles of fortitude and the subjective experiences of safety in adolescents. The participants were administered a version of the Harvard Trauma Scale (Mollica et al., 1992), the Fortitude Questionnaire (FORQ: Pretorius, 1998) and the Safety Index (Ward et al., 2001).

The results of the current study demonstrate a significant positive relationship between all of the violence subscales and trauma-related symptoms. This implies that an increase in exposure to violence is significantly associated with an increase in trauma-related symptoms such as the experiencing of posttraumatic stress symptoms. Previous research have also found a positive relationship between exposure to violence and the experiencing of posttraumatic stress disorder (Bach, 2003; Ensink et al., 1997; Seedat et al., 2000; Ward et al., 2001).

The present study was limited to trauma-related symptoms of PTSD. However, as mentioned previously, adolescents exposed to violence could experience other psychological symptoms such as depression, anxiety and behavioural problems, for example aggression, oppositional and antisocial behaviour. The completion of a single section relating to trauma symptoms (such as PTSD), seem not to incorporate all the possible psychological effects that adolescents could experience upon exposure to violence. For a more broader and "accurate" picture regarding the exposure to violence and its association to symptomatology, it is important to investigate a range of possible psychological effects that adolescents could experience.

In addition, in assessing posttraumatic stress symptoms in adolescents exposed to violence, researchers have used various questionnaires concerning trauma-related aspects. Furthermore, the criteria differed as the instruments were based on the DSM-III, the DSM-III-R

or the DSM-IV. Studies in this regard are difficult to compare as questionnaires tapped various aspects of trauma and had different scoring methods. For example, Ensink et al., (1997) used semi-structured interviews based on the DSM-III-R to illicit posttraumatic stress symptoms in participants and indicated that 21% of the sample met the criteria for PTSD. Peltzer (1999) administered the Children's Posttraumatic Stress Disorder Inventory for diagnosing PTSD. The inventory presents four subtests (viz. traumatisation, unwanted-related ideation, general affect and diverse symptoms such as not able to sleep) that are scored on a dichotomous basis, i.e., 1 for presence and 0 for absence and reported that 8.4% of the participants to have met the criteria for PTSD. Seedat et al. (2000) used the "Trauma Checklist" which corresponded with the DSM-IV criteria. Participants answered on a 4 point Likert Scale ranging form "zero times"/"never true" to "many times"/"very often true". The results of the study were that 32.4% of the sample met the DSM-IV criteria for PTSD. Ward et al., (2001) and the present researcher used the Harvard Trauma Scale which consists of 16 questions based on the DSM-III-R criteria for PTSD. Four response options ranging from "not at all" to "extremely" was provided for the participants to answer. According to Ward et al., (2001), 5.8% of the participants were likely to meet the criteria for PTSD. Although the present researcher did not give a percentage regarding the participants who met the criteria for PTSD, it has indicated that an increase in the exposure to violence was significantly associated with trauma-related symptoms such as PTSD.

Regarding the role of fortitude and sense of safety, the results reflect that it is significantly negatively related to trauma-related symptoms. This suggests that adolescents who have high levels of fortitude and sense of safety would display lower levels of trauma-related symptoms when exposed to violence. The constructs of fortitude and sense of safety could therefore act as variables that could influence the relationship of decreasing the negative mental-health related problems when exposed to violence. The present findings of the role of fortitude and sense of safety being negatively related to the trauma-symptoms, is supported by previous research where individuals with high levels of fortitude reported significantly higher

levels of life satisfaction, positive, affect and subjective well-being than respondents with low levels of fortitude (Heyns et al., 2003; Pretorius, 1998). However, it is important to note that the support for the role of fortitude was researched on population groups who had been exposed to stressors other than violence. Regarding sense of safety, Ward et al. (2001) indicated that most children felt safe in most places. The mean score for sense of safety as reported by Ward et al. (2001) was 13.18 out of a possible maximum score of 16. Further research specifically related to sense of safety is important in order to make comparisons, not only with other ethnic groups, but also with adolescents who reside in different neighbourhoods.

There were significant direct effects for fortitude on trauma-related symptoms when considered with all the violence subscales. This indicates a health-sustaining role for fortitude in respect of trauma-related symptoms. The health-sustaining role (direct effects) hypothesis postulates that the effect of a third variable (for example, fortitude) on well-being is independent on the level of the negative environmental conditions, such as exposure to violence. Also, an increase in the levels of fortitude will result in an increase in well-being, irrespective of the level of stress (in this case, exposure to violence). Other studies, which have looked at the direct effects of a third variable, have also found significant relationships. For example, Pretorius (1992) found that problem-solving appraisal was directly associated with depression in a sample of 450 black South African students at the University of the Western Cape. Furthermore, a study focusing on the role of gender in the direct effects of social support amongst 437 undergraduate students at an historically black university in South Africa, found that women enjoyed health-sustaining effects for the dimensions of support more than men (Pretorius, 1996).

The present research also indicated a significant relationship was found between the product-term of fortitude and the adolescents witnessing "stranger" violence such as 'I have seen a stranger get stabbed'. This would imply that a stress buffering role for fortitude in respect of the impact of witness to stranger violence is more strongly associated with an increase in trauma symptoms for those adolescents low in fortitude than for those high in fortitude. There

has been support for the stress-buffering role for fortitude. Pretorius (1998) found that participants (undergraduate psychology students at the University of the Western Cape) with high levels of stress and high levels of well-being reported higher levels of fortitude than participants with high levels of stress and low levels of fortitude.

An exploration of the results suggests that the moderated regression analysis indicated a high significant direct effect for sense of safety on trauma-related symptoms when considered together with all the violence subscales. It could be postulated that the construct or variable of sense of safety on the well-being of youth is independent of the level of exposure to violence. An increase in the levels of sense of safety will result in an increase in well-being, irrespective of the level of exposure to violence. However, as the reliability scale of Safety Index is below the accepted convention for satisfactory reliability, it is important to view the results with caution. As indicated earlier, the less than satisfactory reliability could be due to the low number of items on the Safety Index Scale.

The results indicate that no significant moderating effect was found for sense of safety. This suggests that sense of safety does not have a stress-reducing function and would not affect psychological adjustment after exposure to violence.

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