Do Contextual Stressors Affect Parenting Behaviours and Child Aggression in South African Townships?

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Abstract

Violence in South Africa is a considerable problem. It is well established that early child conduct problems and aggression are strongly associated with later delinquency and violence. International evidence suggests that parenting behaviours are significant risk factors for child aggression, yet very little is known about parenting in South Africa, particularly among Black Africans. This study aimed to understand the relationships between parenting behaviours, parental efficacy, and contextual stressors; and children's aggression, in a Xhosa population. IsiXhosa-speaking primary caregivers (n =312) who attended various non-governmental organisations in the Western Cape completed a self-report questionnaire. Caregivers were interviewed about their parenting (using the Alabama Parenting Questionnaire, and the short form of the Mother-Child Neglect Scale), their children's behaviour (using the externalising subscales of the Child Behaviour Checklist), parental efficacy (using the Parent Sense of Competence - Efficacy subscale), and about contextual stressors (using the Perceived Neighbourhood Violence Scale, a hunger scale, a household inventory, and items pertaining to single parenthood). Mild corporal punishment as well as inconsistent discipline and supervision significantly predicted child aggression. A lack of positive parenting predicted child aggression which was mediated by parental efficacy. Contextual stressors did not moderate parental efficacy; but perceived neighbourhood violence was related to child aggression. These findings suggest that parenting is a major contributor to child aggression. Thus, the results will have implications for the tailoring of parenting programmes to prevent child conduct problems in South Africa.

Keywords: child aggression, parenting behaviours, contextual stressors, parental efficacy, South Africa

Introduction

South Africa is well-known for its high levels of violence. Two statistics highlight this: The 2011/2012 murder rate was 30.9 per 100 000 population (South African Police Service [SAPS], 2012), and 31.5% of the 31,177 non-natural deaths recorded in 2008, were as a result of violence (National Injury Mortality Surveillance System [NIMSS], 2010). In comparison, England and Wales had only 9.7 homicide offences per million population over 2011/2012 (Office for National Statistics, 2013), while the USA murder rate was 15.2 per 100 000 population in 2009 (United States Census Bureau, 2012). In particular, *youth* violence is highly problematic both globally (Krug, Dahlberg, Mercy, Zwi & Lozano, 2002) and in South Africa (Foster, 2012). It is the youth who have the highest risk of being perpetrators and victims of violence. For example, in South Africa in the 15 to 29 year old age group, the number of fatalities as a result of violence reached their highest peak (NIMSS, 2010).

Violent offending in adolescence and adulthood are often predicted by the presence of aggressive, conduct, oppositional and disruptive behaviours in early childhood (Farrington, 1988; Hutchings, Bywater, Davies, & Whitaker, 2006; Stormshak, Bierman, McMahon, & Lengua, 2000). Therefore, aggression tends to be stable throughout the life course (Eron, Huesmann, & Zelli, 1991). A range of risk factors are associated with child aggression; however, ineffective parenting behaviours have been identified as a particularly common predictor of conduct problems in children (Farrington, 1988; Hutchings et al., 2006; Stormshak et al., 2000; Trudeau, Mason, Randall, Spoth, & Ralston, 2012).

Parenting Behaviours as a Risk Factor for Child Aggression

Several ineffective parenting behaviours contribute to the prediction of oppositional, deviant and aggressive behaviour problems in children. *Social learning theory* and/or *attachment theory* can assist in understanding this relationship (Bandura, 1977; Bowlby, 1973). Social learning theory posits that children learn through direct reinforcement and punishment (Bandura, 1977). Most of the behaviours children display is learned, either inadvertently or consciously, through the influence of example. Therefore, children's learning and self-regulation processes depend on vicarious reinforcement, which is based on rewarding or punishing consequences experienced by the parent and observed by the child (Bandura, 1977; 1986; 2002). Research guided by attachment theory shows how important a secure attachment between primary caregivers and children is, in terms of the child's social,

cognitive and emotional development (Bowlby, 1973). Such an attachment functions protectively for a child's behaviour regulation and control, because it enables children to manage their emotions and behaviour in order to interact pro-socially with others (Bowlby, 1973). These theories explicitly show how critical parenting is for children's behavioural development, and therefore, for child aggression. Many parenting behaviours have been established as risk factors for the development of child aggression. These include: (a) inconsistent parenting, (b) poor supervision and monitoring, (c) neglectful parenting, (d) harsh discipline, (e) little parental interaction and involvement, and (f) a lack of positive parenting.

Inconsistent parenting.

Parents who exercise rule-setting and discipline inconsistently tend to raise children who exhibit higher levels of co-occurring reactive and proactive aggression (Fite, Colder, & Pelham, 2006), as well as adolescents who exhibit conduct problem behaviours (Frick, Christian, & Wootton, 1999). South African parents of young offenders express confusion over their disciplinary roles and are likely to pass on their disciplinary responsibilities to social workers (Mandisa, 2007). Both behaviours suggest disciplinary inconsistencies. Inconsistent parenting puts children at risk for developing problematic self-regulating skills. Such parenting may increase the chances of children failing to make a connection between their unfavourable behaviour and the consequences of it (Bandura, 2002).

Poor supervision and monitoring.

Parental supervision and monitoring are inversely associated with delinquent behaviours in children. According to a meta-analysis, a lack of parental supervision is one of the strongest predictors of problematic conduct behaviours and delinquency in children (Loeber & Stouthamer-Loeber, 1986). Adolescent antisocial behaviour in South Africa is also significantly negatively correlated with parental monitoring (Barber, Stolz, Olsen, Collins, & Burchinal, 2005; Mandisa, 2007). A lack of supervision and monitoring prevent parents from correcting their child's adverse behaviour when necessary, which may result in the child failing to learn appropriate behavioural control (Loeber & Stouthamer-Loeber, 1986).

Neglectful parenting.

Child neglect occurs when both "basic physical and/or psychological needs" fail to be met by the child's caregiver (Tang, 2008, p. 359). Neglect has long-lasting and profound effects on a child, especially if the neglect occurs early in a child's development (Kotch et al., 2008). Neglect has been associated with child aggression in longitudinal studies; child aggression can be predicted from neglect experienced before the age of two (Kotch et al.,

2008). Additionally, cross-sectional studies show that physically neglected children tend to show higher levels of externalising behaviours and aggressive conduct, in comparison to non-maltreated children (Manly, Kim, Rogosch, & Cicchetti, 2001). Neglectful parenting prevents children from benefiting from the protective factors associated with secure attachment because parents express minimal affection, and enforcement of rule setting tends to be overlooked. Therefore, in neglecting these important parenting behaviours, children are more likely to be at risk for developing delinquent and aggressive behaviours (Maccoby & Martin, 1983).

Harsh discipline.

Corporal punishment is an example of harsh discipline. This parenting behaviour has been associated with child aggression in both longitudinal and cross sectional studies. Spanking and hitting are related to conduct problems in children of primary school ages (Frick et al., 1999), and with aggression in children (Fite et al., 2006). The severity of harsh discipline in early childhood is positively associated with later childhood aggression (Weiss, Dodge, Bates, & Pettit, 1992). A South African national survey on corporal punishment reported that 57% and 33% of parents smack and beat their children respectively (Dawes, Kafaar, De Sas Kropiwnicki, Pather, & Richter, 2004). Coercive disciplinary strategies, such as spanking, beating or hitting, are strong predictors of the development of violent behaviours in children, especially if they are also erratic (Barbarin & Richter, 2001). The high levels of corporal punishment in South Africa suggest that many children are at risk for developing aggressive behaviour. This relationship can be explained by drawing on social learning theory which predicts that children who have experienced harsh discipline may perceive and come to learn that this is an appropriate behaviour (Bandura, 1977).

Little parental interaction and involvement.

High levels of positive interaction between parent and child function protectively in terms of a child's behaviour development (Howard & Jenson, 1999). In contrast, low levels of both parental warmth and positive involvement may contribute to the development of problematic behaviours (Pettit & Bates, 1989). For example, parent–child relationships characterised by a lack of attention, affection and supportiveness have been linked with child insecurity and emotion regulation difficulties. These difficulties include frequent child temper tantrums, whining, stubbornness and noncompliance, and are all observed in oppositional-defiant children (Pettit & Bates, 1989; Pettit, Bates, & Dodge, 1997). Two South African studies on youth offenders reported parental involvement as lacking (Leoschut & Bonora,

2007; Mandisa, 2007). Together, these studies suggest that some children in South Africa are at risk for developing aggressive and delinquent behaviours.

A lack of positive parenting.

Child aggression is inversely related to a range of positive parenting behaviours. Infants receiving little affectionate caregiving at six months have higher ratings of aggression at 17 years (Olson, Bates, Sandy, & Lanthier, 2000). Similarly, there is a significant relationship between a lack of emotional warmth from parents and aggression in 10 to 12 year olds (Buschgens et al., 2010). Moreover, South African adolescent and young adult offenders perceived that they were provided with minimal support from their parents in comparison to non-offenders. Thus, parental support is also negatively associated with antisocial behaviours in South Africa (Barber et al., 2005; Leoschut & Bonora, 2007). Positive parenting behaviours co-occur with a secure attachment as parents are more likely to be responsive, show parental warmth, support and affection when a secure attachment is formed (Booth-LaForce & Kerns, 2009; Bowlby, 1973). Thus, a lack of secure attachment and little positive parenting may prevent children from developing positive internal working models. Positive internal working models inform how children respond to others and therefore, help regulate and guide behaviour appropriately (Bowlby, 1973). In this way, a lack of positive parenting is a risk factor for the development of child aggression.

Contextual Stressors in South Africa

Parenting is situated within larger contexts which exert additional influence on children's development. Bronfenbrenner's (1977) ecological model explicitly acknowledges that human development is influenced by a range of systems of varying proximity to the individual. Additionally, it recognises that there are various risk and protective factors operating within each system. This model is useful for understanding how circumstances outside the family can affect child-rearing within the family system.

South African parents encounter daily contextual stressors. The accumulation of these stressors may contribute indirectly, via their negative effect on parental efficacy, to child aggression (Brody et al., 2003; Pinderhughes, Nix, Foster, & Jones, 2001; Shumow & Lomax, 2002). Parental efficacy is the extent to which parents believe they can overcome the negative contexts and stressors in which they live (Elder, Eccles, Ardelt, & Lord, 1995; Shumow & Lomax, 2002). This is an important factor to consider as it assists in understanding how stressors impact on parents' sense of competence, and therefore, influence the quality of parenting. Caregivers with low parental efficacy are less resilient in

their coping strategies and feel more hopeless than parents with high efficacy levels (Jackson 2000; Shumow & Lomax, 2002). Consequently, low parental efficacy is a risk factor for poor parenting, which is more likely to result in child behavioural problems (Jackson, 2000). Thus, it is important to consider a range of contextual stressors that may affect the relationship between parenting and parental efficacy.

Economic hardship.

Economic hardship and poverty are not direct causes of poor parenting. However, these characteristics are associated with factors that contribute to negative parenting behaviours (van der Merwe, Dawes, & Ward, 2012). In 2006, 25% of the South African population survived on less than R17.92 a day (Statistics South Africa, 2010). Furthermore, in 2010, 60% of South Africa's children lived below the poverty line, with a per capita income below R575 per month (Hall, Woolard, Lake & Smith, 2012).

Parents living in situations of economic hardship may not have the resources to meet their children's needs. These harsh circumstances increase parental distress, which in turn, has the ability to diminish a parent's capacity for consistent, supportive and involved parenting (Barbarin & Richter, 2001; Pinderhughes et al., 2001). Parents living in poverty are less likely to reinforce good behaviour, are less nurturing, and are also likely to punish physically (McLoyd, 1990). Additionally, it is more likely that children who have been maltreated will have parents who are under financial strain than children who are not maltreated (Dore & Lee, 1999). Parents living in economic hardship tend to be disinclined to communicate competently with their children, express affection physically and verbally, and monitor their children (Bradley, Corwyn, McAdoo, & Coll, 2001). In harsh economic circumstances parents also tend to endorse aggressive responses as a problem solving technique, and express little maternal warmth (Dodge, Pettit, & Bates, 1994).

The statistics, combined with the international and national literature, strongly suggest that the quality of parenting is threatened as a result of living in harsh economic contexts. This in turn places children at risk for developing aggressive behaviours.

Single Parenthood.

More than 7 million children (39%) live in single-adult households in South Africa (Hall et al., 2012). Single parents do not have the option of sharing their responsibilities which include: Financially supporting the family, parenting demands and household chores. This leaves single parents with less energy, and combined with economic hardship, increases parental distress; making it more challenging for them to monitor, stimulate and care for their children. Thus, this increases the risk that they may not be able to manage to carry out

important parenting behaviours, which in turn escalates the risk for the child developing delinquent behaviour (Barbarin & Richter, 2001).

Parenting in context of neighbourhood violence.

SAPS statistics show a common pattern of violence found in South Africa: the poor and marginalised, generally those living in black and coloured townships, experience the most violent crime (Foster, 2012). For example, Khayelitsha is one of the largest townships in the Western Cape and is primarily occupied by isiXhosa speaking people. In this township homicide is the leading cause of premature mortality, second to HIV/AIDS (Groenewald et al., 2008).

Neighbourhood violence, like economic hardship is a risk factor for poor parenting. Neighbourhood violence and danger are associated with child maltreatment (Lynch & Cicchetti, 1998), lower levels of parental monitoring and supervision (Furstenburg, 1993), little parental warmth and higher levels of both harsh and inconsistent disciplinary behaviour (Pinderhughes et al., 2001). These are all examples of poor and ineffective parenting behaviours. Therefore, it is apparent that violent neighbourhoods may exacerbate parents' experiences of stress and powerlessness, which may interfere with effective parenting (Brody et al., 2003; Shumow & Lomax, 2002).

South Africans at Risk

It is primarily those living in black townships who experience the largest amounts of community violence, as well as economic hardship, in South Africa (Foster, 2012). Black residents of the Western Cape are predominantly isiXhosa speaking. Thus, Xhosa people are at risk for experiencing a range of contextual stressors which are expected to impact on their parenting behaviours. Therefore, it is of utmost importance that research on child aggression considers this population. However, there is an absence of literature focusing on parenting among isiXhosa speaking people. Consequently, the relationship between contextual stressors, parental efficacy, parenting behaviours and their associations with child aggression in this language group, is in much need of exploration.

Rationale

In brief, a range of parenting behaviours is well established in the international literature as a risk factor for the development of aggressive behaviours in children and adolescents. Parents living in contexts where stressors external to the family are prevalent, are more likely to exhibit ineffective parenting practices. Many South African parents live in violent neighbourhoods, raise their children alone, and experience economic hardship. These

adverse conditions are largely experienced in black townships; in the Western Cape by isiXhosa-speaking people. Contextual stressors hinder effective parenting, negatively impact parental efficacy, and may indirectly contribute to child aggression, but have not been explored in this population in South Africa. Given South Africa's high violence rates, exploring the relationship between contextual stressors and ineffective parenting, and their relative contributions to child outcomes, is very necessary. This research is an important step towards identifying appropriate interventions to prevent the development of aggression in South African children.

Specific Aims and Hypotheses

The primary objectives of the study included determining whether parenting behaviours would predict child aggression, as well as whether parenting behaviours would be mediated by parental efficacy. Additionally, our aim was to investigate whether parental efficacy was moderated by contextual stressors. These relationships were explored using an isiXhosa-speaking sample. Levels of the key variable 'parenting behaviours' include: (a) inconsistent parenting, (b) poor supervision and monitoring, (c) neglectful parenting, (d) harsh discipline, (e) little parental interaction and involvement, and (f) a lack of positive parenting. The following hypotheses were tested:

H_1: Positive parenting will be negatively related to child aggression.

H_2: Parental involvement and interaction will be inversely related to child aggression.

H_3: Monitoring and supervision will be inversely related to child aggression.

H_4: Inconsistent discipline will be positively related to child aggression.

H_5: Harsh discipline will be positively related to child aggression.

H_6: Neglect will be positively related to child aggression.

H_7: Low levels of: Positive parenting, parental involvement, parental monitoring and supervision; and high levels of: Inconsistent discipline, harsh discipline and neglect will all significantly predict child aggression.

H_8: Parenting behaviours will be mediated by parental efficacy; low parental efficacy will negatively affect parenting behaviours.

H_9: Parental efficacy will be moderated by contextual stress; high contextual stress will negatively affect parental efficacy.

Methods

Research Design

This study formed part of a larger study which looked at the psychometric properties of the Alabama Parenting Questionnaire (APQ). The larger study aimed to validate the measure in an isiXhosa-speaking sample. This smaller study looked at, in part, the APQ's criterion validity. The design adopted for this study was quantitative and cross-sectional. The predictors in this study were: Ineffective parenting behaviours, contextual factors, and parental efficacy. The outcome variable was child aggression. Ethical approval was granted by the Humanities Research Ethics Committee for UCT.

Participants

The total sample included 312 participants. Participants were only eligible for participation if they met two inclusion criteria specifically. They needed to be (a) care-givers/parents with children between the ages of 6 and 18 years, and (b) isiXhosa speaking. Participants were recruited using convenience sampling.

Measures

All the measures (Appendix B) used in this study were translated into isiXhosa and checked by back-translation, to ensure that they were correctly adapted for the participants in this study. However, none were normed for South African populations.

Child aggression.

The Child Behaviour Checklist (CBCL) was used to measure child aggression. The Externalising Problem subscale of the CBCL/6-18 school age version was used in this study. Externalising problem behaviours are defined as children having "conflicts with other people and with their expectations for children's behaviour" (Achenbach & Rescorla, 2001, p. 24). This subscale is made up of: (a) rule breaking behaviour (e.g., items that pertained to vandalism, lying, a lack of guilt, and breaking rules), and (b) aggressive behaviour (e.g., items regarding fighting, argumentative behaviours and destroying own and others things) syndrome scales (Achenbach & Rescorla, 2001).

This subscale of the questionnaire is made up of 35 items. The items range from 0-2 on a three-point Likert-type scale. The caregivers were required to indicate if the item was "not true" (a score of 0), "sometimes true" (a score of 1) or "very true" (a score of 2). A total score on this subscale of social functioning was calculated; with higher scores indicating poorer functioning.

The CBCL is an effective and useful measure for assessing children's behavioural and emotional problems (Achenbach & Rescorla, 2001). The CBCL's psychometric properties indicate good predictive validity; it has the ability to distinguish between children with or without behavioural and emotional problems and disorders (Novik, 1999). Furthermore, the

CBCL has strong external, criterion-related and construct validity (Achenbach,1998; Novik, 1999). Significant differences have been found between the average scores in the narrow and broad band, as well as the new DSM/oriented scales, suggesting it is a valid screening measure (Albores-Galo et al., 2007). Moreover, the internal consistency and test-retest reliability of the CBCL/4-18 scales are adequate (Achenbach, 1998). The intraclass correlation coefficient (ICC) for the externalising subscale has been found to be .81 (Leung et al., 2006). Cronbach's alpha for this subscale has also been reported at a high level of 0.94 (Albores-Gallo et al., 2007).

Parenting behaviours.

The Alabama Parenting Questionnaire (APQ) Global Parent Report version was used to measure parenting behaviours in this study. The APQ is a measure of five different parenting dimensions that have been shown to be causally related to youth conduct problems and delinquency, including: (a) inconsistent parenting, (b) poor supervision and monitoring, (c) harsh discipline, (d) little parental interaction and involvement, and (e) a lack of positive parenting (Frick et al., 1999).

This scale consists of 42 items in statement form, which parents could endorse along a 5 point Likert type scale from "never" to "always". The APQ Global Parent Report has been used internationally, for example in Australia (Elgar, Waschbusch, Dadds, & Sigvaldason, 2007), and the USA (Shelton, Frick, & Wootton, 1996). The Global Parent Report of the APQ shows adequate psychometric properties in other studies. For the most part, the APQ subscales show good reliability. The subscales of 'Corporal Punishment' and 'Poor Monitoring and Supervision' have been found to have low Cronbach alpha's, $\alpha = 0.55$ and $\alpha = 0.67$, respectively (Dadds, Maujean & Fraser, 2003). All other subscales have shown adequate Cronbach alpha's greater than, $\alpha = 0.70$. The APQ has moderate to adequate levels of validity (Dadds et al., 2003). This measure is capable of successfully differentiating between families with children showing disruptive behaviour disorders, and families with 'normal' control children (Shelton et al., 1996). Additionally, the APQ is both valid and clinically informative (Hawes & Dadds, 2006).

Prior to this study, cognitive interviewing, whereby each participant was asked about their understanding of each item, was conducted on the APQ. This larger study helped to ensure that participants were able to understand all of the items correctly. Additionally, this larger study conducted a factor analysis on the scale. Based on this analysis, two scales emerged (See Appendix G for the APQ factor structure). Items from the original subscales of 'Inconsistent Discipline' as well as 'Poor Supervision and Monitoring' loaded onto a single

factor which was named as 'Inconsistent Discipline and Supervision'- including parenting behaviours of monitoring and supervising a child's whereabouts and activities. The second factor consisted of items that related to characteristics of positive parenting behaviours and was labelled 'Positive Parenting' - including praising, rewarding and showing affection to their child for good behaviour. Therefore, further analyses only made use of these newly derived subscales. Total scores for each of these parenting behaviours were calculated and used in further analyses.

It was surprising that items relating to harsh discipline did not load onto any factor in the larger study. Since there is much theoretical evidence that strongly suggests that harsh discipline (e.g., corporal punishment) is related to child aggression (Barbarin & Richter, 2001; Fite et al., 2006; Frick et al., 1999), we thought it was necessary to explore this relationship further. More specifically, we thought it would be necessary to consider the levels of severity of harsh punishment for our analysis. First, we decided to explore the relationship of 'Harsh Corporal Punishment' (e.g., hitting a child with an object) to child aggression. Secondly, 'Mild Corporal Punishment' (such as, slapping and spanking a child) was also included in the analysis (See Appendix G for Mild and Harsh Corporal Punishment scale construction).

In addition to the APQ, the Short Form of the Mother-Child Neglect Scale (MCNS) was used to determine whether parents showed neglectful behaviours towards their children. The MCNS short version (Lounds, Borkowski & Whitman, 2004) was adapted from the short form of the Multidimensional Neglectful Behaviour Scale - which is a self-report questionnaire of neglectful experiences (Straus, Kindard, & Williams, 1995). The MCNS consists of 8 items in statement form, which parents could endorse on a 4-point Likert-type scale from "strongly agree" to "strongly disagree" (Lounds et al., 2004). Further analysis was based on a total score for this scale, whereby higher scores indicate that children have experienced neglect.

The psychometric properties of this scale were determined on a sample (n =100) from Midwest urban, and Southern rural areas of the USA (Lounds et al., 2004). The sample was at greater risk for child neglect because the participants were teenage mothers (Lounds et al., 2004). The reliability for this measure was very high in this study, $\alpha = 0.90$. Correlations between this measure's score, quality of interaction between mother and child, potential for child abuse, and mothers' past reporting's of neglect, were significant, suggesting it is a valid measure of the construct (Lounds et al., 2004).

Parental efficacy.

The Parenting Sense of Competence Scale (PSOC) was used to measure parental efficacy in this study. It is comprised of two scales, supported by factor analysis, that measure parental satisfaction and parental efficacy (Lovejoy, Verda, & Hays, 1997). However, this study only used the Parent Sense of Competence Scale - Efficacy Scale (PSOC - ES). The PSOC - ES subscale was intended to measure "the degree to which a parent feels competent and confident in handling child problems" (Johnston & Mash, 1989, p. 176). The PSOC - ES consists of 8 items answered on a 6-point scale ranging from "strongly disagree" to "strongly agree." For all items, lower scores indicate greater parental efficacy. Further analyses were based on a total score for this scale as well. The PSOC - ES has been adapted and used cross-culturally in international studies in the USA and Canada (Lovejoy et al., 1997; Ohan, Leung, & Johnston, 2000).

This scale has sound psychometric properties. Good internal consistency ranging from, $\alpha = 0.76$ to $\alpha = 0.88$ for the PSOC – ES has been found (Johnston & Mash, 1989; Lovejoy et al., 1997; Ohan et al., 2000). Additionally, the PSOC - ES has good divergent and convergent validity (Ohan et al., 2000). There is strong convergent validity of the PSOC - ES with the Parental Locus of Control - Short Form, r (89) = -0.24, p <0.05 (Ohan et al., 2000). Moreover, the construct validity of the PSOC - ES is strongly upheld (Lovejoy et al., 1997).

Contextual stressors.

Contextual stressors were measured in terms of perceived neighbourhood violence, economic hardship, and single parenting. The Perceived Neighbourhood Scale consists of four subscales including: (a) social embeddedness, (b) sense of community, (c) satisfaction with neighbourhood, and (d) perceived crime (Martinez, Black & Starr, 2002). Only the perceived crime subscale was included for this study's purposes. This subscale was chosen because we specifically aimed to look at neighbourhood violence as a distinct contextual stressor. The subscale consists of 9 items in statement form, which participants could endorse along a 5-point Likert-type scale, with options ranging from "strongly agree" to "strongly disagree". A total score was calculated and used in further analyses.

The psychometric properties of this scale were originally determined using an African-American sample (n =129), and most of the participants were female and single parents. All the participants resided in the US city of Baltimore, in low-income neighbourhoods. Data were collected twice, when participants' children were 3 and 5 years old (Martinez et al., 2002). This subscale had a high reliability coefficient of alpha, α >0.80. This measure also showed evidence for convergent validity over time (Martinez et al., 2002).

Economic hardship was operationalized by using a household inventory, employment status, and assessment of sources of income, and a hunger scale. The household inventory measured standard of living based on ownership of particular household items. Economic hardship was identified by the ownership of fewer items. Economic hardship was also measured by asking the participants to specify their employment status, as well as sources of income. Additionally, economic hardship was recognised if participants were unemployed, received social grants, and lacked income. The fourth operationalization of economic hardship was a hunger scale. Participants who stated that they either, (1) ran out of money to buy food, (2) cut the size of or skip meals due to lack of food in the home, (3) had children who went to bed hungry because there was not enough money to buy food, or (4) had children regularly receiving food from other sources, were considered to be economically disadvantaged. Participants were required to give a 'yes' or 'no' response to items. Total scores for each of these measures were calculated and added together. This total was used in further analysis (see Appendix G for the final Economic Hardship Scale construction).

Single parenthood was operationalized using one item. This included: (1) 'Is there any other caregiver present?' Participants were required to answer this question by choosing 'yes' or 'no'. A total score was calculated for this and used in subsequent analyses.

Procedure

Various non-government organisations (NGOs) in the Western Cape were contacted for permission to conduct the research study, which required the participation of caregivers utilising their services. Permission was also requested for the researchers to use a portion of their premises for the interviews, as it was most convenient for the participants.

The interview method was chosen in case literacy levels made it difficult for the participants to complete the questionnaire on their own. This method helped ensure full completion of the questionnaires as well as standardisation of administration. All interviews were conducted in private rooms so as to uphold the ethical principle of privacy. The interviews were conducted by isiXhosa-speaking fieldworkers. Fieldworkers were undergraduate psychology and social work students from University of Cape Town (UCT). Training was provided by the team of researchers and the supervisor of this study. Fieldworkers received 6 hours of training before entering the field. The training included a discussion of the questionnaires, explanation of the study, ethics training, and discussion of the consent form. They were recruited through the Student Research Participation Programme (SRPP) at UCT.

The fieldworkers approached caregivers at the NGOs with information about the study, and invited them to participate. Fieldworkers then explained all necessary information about the study so as to gain participants' informed consent (See Appendix A). Participants were then interviewed in a private room. The interviews took approximately 40 minutes to complete. The researchers supervised the whole process of data collection.

Data Analysis

After the interview process, the questionnaires were collected and the data were recorded using 'Statistical Package for the Social Sciences' (SPSS) *version 21*. Data was shared only between the researchers of this study and stored on password protected computers. All missing values were replaced by the individual participant's average scores for the respective scales. This is seen as an appropriate method for dealing with missing cases (Allison, 2011). A total of 12 scores were imputed this way.

Descriptive statistics were then computed. These aided our understanding of the data's central tendency, variance, and also allowed us to check the assumptions for inferential statistics (Appendix C and D). Additionally, Cronbach's alpha was calculated for all the scales, to ensure they were reliable measures of the constructs in the study. Each hypothesis was explored by running bivariate analyses to determine the various relationships of each variable with child aggression. Only those analyses that were significant were further explored through inferential statistics using multiple regression analysis. The Sobel Test was used to determine if parental efficacy was a mediator of the relationship between negative parenting behaviours and child aggression (Preacher & Leonardelli, 2013). A moderation regression analysis was also run to determine if contextual factors moderated parental efficacy.

Results

Description of the Sample

Description of the parents.

The sample originally comprised of 316 participants. Four participants were lost due to providing inaccurate data: (a) a fieldworker informed us that one participant did not have a child in the appropriate age-range, (b) two participants spoke a language other than isiXhosa, and lastly, (c) one participant failed to complete the questionnaire adequately enough for sufficient imputation. Therefore, the final sample consisted of 312 primary caregivers who were isiXhosa speaking. Primary caregivers in the sample were largely biological parents

(86.50%, *n* = 270). Grandparents were the next most common caregivers (7.70%, *n* = 24), with step-parents, foster parents, adoptive parents and the category 'other' making up the remainder of the sample. A third of the sample was single parents (33.70%, *n* =105). A slight majority of our sample had male children (56.70%, *n* = 177), with 43.30% having female children (*n* = 135). Just under 60% (*n* = 187) of our sample had a child between the ages of six and nine.

Description of the children.

Table 1 (below) represents the percentage and number of children in our sample that fell within the borderline or clinical ranges for Externalising Problem behaviours. The scores in the borderline and clinical ranges significantly discriminate between children who are referred for mental health or special education services for behavioural problems. Both borderline and clinical scores indicate that children with these scores may benefit from professional help. Children who received *T* scores from 65-69 fell into the borderline clinical range (Achenbach & Rescorla, 2001). In the borderline clinical range children are considered to be of concern but are clearly less deviant than those in the clinical range (*T* scores ≥ 70) (Achenbach & Rescorla, 2001). Moreover, the borderline clinical range is defined as the 84th-90th percentile whilst the clinical range is greater than or equal to the 90th percentile for Externalising Problems (Achenbach & Rescorla, 2001). Most of these children showed conduct problems (33.01%, *n* =103). This was followed by rule breaking behaviours (24.36%, *n* =76), aggressive behaviours (23.72%, *n* =74) and oppositional defiant problems (10.26%, *n* =32).

Table 1

Child Behaviour Checklist Showing the Percentage and Number of Clinical and Borderline Cases in the Sample (n =312)

	Rule Breaking Behaviours % (*n*)	Aggressive Behaviours % (*n*)	Oppositional Defiant Problems % (*n*)	Conduct Problems % (*n)*
Borderline Clinical Range (*B)*	8.65% (27)	13.14% (41)	6.09% (19)	16.67% (52)
Clinical Range *(C*)	15.71% (49)	10.58% (33)	4.17% (13)	16.35% (51)
Total	24.36% (76)	23.72% (74)	10.26% (32)	33.01% (103)

Table 2 (below) presents the descriptive statistics for the scales used in this study. Just over 65% of the participants owned between six and ten items out of a possible fifteen household items (n = 205), and 64.40% of participants reported that they were not working (n = 201). This suggests that most of our sample live under circumstances of economic hardship. From the Neglect Scale descriptive statistics, it is evident that a large majority of the sample were not neglectful in their parenting. The descriptive statistics indicate that the majority of parents in this sample felt efficacious about their parenting behaviours. For the most part, this sample largely reported that they perceived their neighbourhoods to be violent.

Table 2

Descriptive Statistics for the Scales Used in this Study

Scales	N	Mean	SD	Actual Range		Possible Ranges	
				Min	Max	Lowest	Highest
Child Behaviour Checklist	312	12.46	8.80	0.00	48.00	0.00	70.00
Neglect Scale	312	10.64	2.47	8.00	18.00	8.00	32.00
APQ Positive Parenting	312	59.23	7.53	37.00	75.00	15.00	75.00
APQ Inconsistent Discipline and Supervision	312	11.86	4.34	7.00	32.00	6.00	30.00
APQ Mild Corporal Punishment	312	2.46	1.00	1.00	5.00	2.00	10.00
APQ Harsh Corporal Punishment	312	1.87	1.04	1.00	5.00	1.00	5.00
Parent Sense of Competence	312	14.76	5.04	8.00	36.00	8.00	48.00
Household Inventory	312	7.82	2.80	1.00	15.00	0.00	15.00
Economic Hardship	312	8.17	2.95	1.00	15.00	0.00	16.00
Perceived Neighbourhood Scale	312	18.59	6.64	9.00	40.00	5.00	45.00

Table 3 (below) shows how all the scales used in this study were correlated with one another.

Table 3

Intercorrelation Matrix of Scales

	CBCL	SP	EH	HCP	ID&S	MCP	PP	TPSC	TPNS	CTPNS	CTPSC	HI	TNS
CBCL	1	0.06	0.02	0.09	0.39**	0.23**	-0.18*	0.22**	-0.23**	-0.23**	0.22**	0.04	-0.04
SP		1	0.26**	-0.05	-0.02	0.03	0.00	0.15*	0.00	0.00	0.15*	0.28**	-0.06
EH			1	-0.14*	-0.06	-0.05	0.22**	0.08	-0.01	-0.01	0.08	0.99**	-0.20**
HCP				1	0.17*	0.16*	-0.20**	0.10	0.01	0.01	0.10	-0.12*	0.13*
ID&S					1	0.17*	-0.06	0.00	-0.12*	-0.12*	0.00	-0.04	0.11
MCP						1	0.01	0.07	-0.05	-0.05	0.07	-0.04	-0.05
PP							1	-0.37**	0.02	0.02	-0.37**	0.22**	-0.27**
TPSC								1	0.04	0.04	1.00**	0.07	0.17*
TPNS									1	1.00**	0.00	0.00	0.13*
CTPNS										1	0.00	0.00	0.13*
CTPSC											1	0.07	0.17*
HI												1	-0.20**
TNS													1

*p<.05. **p<.001.

Note. CBCL = Child Behaviour Checklist. SP= Single Parenting. EH= Economic Hardship. HCP=Harsh Corporal Punishment. ID&S= Inconsistent Discipline and Supervision. MCP= Mild Corporal Punishment. PP= Positive Parenting. TPSC= Transformed Parent Sense of Competence. TPNS = Transformed Perceived Neighbourhood Scale. CTPNS= Centred Transformed Parent Sense of Competence. CTPNS = Centred Transformed Perceived Neighbourhood Scale. HI= Household Inventory. TNS= Transformed Neglect Scale.

Reliability Statistics

A Cronbach's alpha equal to or greater than 0.70 is an acceptable measure of reliability (Nunnally, 1978). Table 4 (below) shows that seven of the nine scales used in this study, had Cronbach Alpha scores above 0.70. Cronbach's alpha below 0.7, but equal to or greater than 0.6, are reliable for sample sizes larger than 250 (Hair, Black, Babin, & Anderson, 2009). Therefore, the scales with Cronbach's alpha below 0.7 were still adequate for analyses in this study.

Table 4

The Reliability Statistics Showing the Cronbach's Alpha for Each Scale

Scales	Cronbach's Alpha	No. of Items
Child Behaviour Checklist	0.86	35
Neglect Scale	0.76	8
APQ Positive Parenting	0.77	15
APQ Inconsistent Discipline and Supervision	0.71	7
APQ Mild Corporal Punishment	0.60	2
Parent Sense of Competence	0.67	8
Household Inventory	0.77	15
Economic Hardship	0.76	16
Perceived Neighbourhood Scale	0.82	9

Bivariate Regressions (Appendix E)

Non-significant predictors of child aggression.

There is a robust body of literature that points to the importance of age and gender as being associated with externalising behaviours in children (Jenson & Howard, 1999; Loeber & Hay, 1997). However, in this study they were not significantly associated with externalising behaviours, (*age*, $t = -0.30$, $p = 0.77$; *gender*, $t = -0.74$, $p = 0.46$). As a result they were excluded from further analyses. The parenting behaviours of neglect and harsh corporal punishment did not predict child aggression (respectively, $t = -0.66$, $p = 0.51$; $t = 1.53$, $p = 0.13$). The contextual factors that had no significant relationship with child aggression were economic hardship ($t = 0.38$, $p = 0.70$), and single parenthood ($t = 0.97$, $p = 0.33$).

Significant predictors of child aggression.

The parenting behaviour of positive parenting significantly predicted child aggression (t = -3.29, p <0.05). The negative value suggests that a lack of positive parenting is associated with child aggression. Other parenting behaviours, including: Inconsistent discipline and supervision (t =7.53, p <0.001), as well as mild corporal punishment (t = 4.12, p <0.001), also significantly predicted child aggression. Feeling incompetent as a parent and therefore, low levels of parental efficacy, had a significant relationship with child aggression (t =3.91, p <0.001). Perceived neighbourhood violence was the only contextual stressor that significantly predicted child aggression (t =-4.20, p <0.001).

As a result of these significant findings, mediation regression analyses were able to be conducted as originally hypothesized. Table 5 (below), represents the mediation analysis between positive parenting and child aggression. There was a significant relationship between a lack of positive parenting and child aggression. We originally hypothesized that this relationship was mediated by a lack of parental efficacy. The last model was able to confirm that the relationship between a lack of positive parenting and child aggression was mediated by lack of parental efficacy (Sobel z test = -2.69, p <0.05). (See Appendix F for assumptions of the mediation regression).

Table 5

Parental Efficacy Mediating the Relationship Between Positive Parenting and Child Aggression

Dependent Variables in the Different Models	Child Aggression	Parent Sense of Competence	Child Aggression
Variable	Model 1 *B* (*SE*)	Model 2 *B* (*SE*)	Model 3 *B* (*SE*)
Constant	25.18** (3.90)	1.56** (0.06)	8.75 (6.84)
Positive Parenting	-0.22* (0.07)	-0.01** (0.00)	-0.14* (0.07)
Parent Sense of Competence			10.54* (3.62)
R^2	0.03	0.13	0.06
F	10.83*	47.86**	9.77**
ΔR^2	0.03	0.13	0.06
ΔF	10.83	47.86	9.77

*p <.05. **p <.001.

Table 6 (below) shows that although there was a significant relationship between inconsistent discipline and supervision and child aggression, there was no relationship between this parenting behaviour and parental efficacy. Therefore, parental efficacy did not mediate the relationship between child aggression and ineffective discipline and supervision.

Table 6

Parental Efficacy Mediating the Relationship Between Inconsistent Discipline and Supervision to Child Aggression

	Child Aggression	Parent Sense of Competence
Variable	Model 1 *B* (*SE*)	Model 2 *B* (*SE*)
Constant	3.01* (1.34)	1.14**(0.02)
Inconsistent Discipline and Supervision	0.80** (0.11)	0.00 (0.00)
R^2	0.16	0.00
F	56.69**	0.00
ΔR^2	0.16	0.00
ΔF	56.69	0.00

*p <.05. **p <.001.

Table 7 (below) indicates that there was a significant relationship between mild corporal punishment and child aggression. Yet, there was no relationship between this parenting behaviour and parent sense of competency. Therefore, parental efficacy did not mediate the relationship between child aggression and mild corporal punishment.

Table 7

Parental Efficacy Mediating the Relationship Between Mild Corporal Punishment to Child Aggression

	Child Aggression	Parent Sense of Competence
Variable	Model 1 *B* (*SE*)	Model 2 *B* (*SE*)
Constant	7.54** (1.29)	1.12** (0.02)
Mild Corporal Punishment	2.00** (0.49)	0.01 (0.01)
R^2	0.05	0.01
F	16.99**	1.49
ΔR^2	0.05	0.01
ΔF	16.99	1.49

*p <.05. **p <.001.

We originally hypothesized that parental efficacy would be moderated by contextual stressors, which would, in turn, impact the quality of parenting. Perceived neighbourhood violence was the only contextual stressor to have a relationship with child aggression and therefore, a moderation analysis was conducted. Table 8 (below) represents the moderation regression analysis, showing that the interaction term ("perceived neighbourhood violence x parent sense of competence") was not significant. As a result, perceived neighbourhood violence did not moderate parental efficacy.

Table 8

Perceived Neighbourhood Violence Moderating Parent Sense of Competence.

	Child Aggression	
Variable	Model 1 *B* (*SE*)	Model 2 *B* (*SE*)
Constant	12.46** (0.47)	12.46** (0.48)
Perceived Neighbourhood Violence	-13.21** (3.06)	-13.18** (3.07)
Parent Sense of Competence	13.28** (3.30)	13.32** (3.31)
Perceived Neighbourhood Violence x Parents Sense of Competence		2.88 (22.14)
R^2	0.10	0.10
F	17.37**	11.55**
ΔR^2	0.10	0.00
ΔF	17.37**	0.02

*p <.05. **p <.001.

Discussion

Based on parents' reports, this study found that almost 34% of children in our sample fell into the borderline and clinical range for conduct problems. Furthermore, it confirmed that parenting behaviours are key contributors to child aggression. Additionally, parental efficacy appears to play a role in mediating aspects of this relationship. No contextual stressors were found to moderate parental efficacy. Lastly, the perception of neighbourhood violence was a significant predictor of child aggression.

Parenting Behaviours

Three forms of poor parenting behaviours were significantly related to child aggression; namely, inconsistent discipline and supervision, mild corporal punishment and a lack of positive parenting.

Inconsistent discipline and supervision.

We originally hypothesized that monitoring and supervision would be inversely related to child aggression, while inconsistent discipline would be positively related to child aggression. Inconsistent discipline and supervision showed a direct positive relationship to child aggression. Therefore, this finding essentially supports what we originally hypothesized.

This result also converges with other literature. Parents who use inconsistent disciplinary strategies with their children tend to have children who exhibit higher levels of aggression (Barber et al., 2005; Fite et al., 2006). Moreover, a lack of supervision has been found to be one of the strongest predictors of delinquency in children (Loeber & Stouthamer-Loeber, 1986; Mandisa, 2007). Inconsistent discipline and supervision may be related to child aggression because both parenting behaviours in effect, prevent the opportunity for children who are expressing adverse behaviour to be corrected. By failing to be corrected, children do not learn appropriate social behavioural control and regulation (Bandura, 2002; Loeber & Stouthamer-Loeber, 1986).

International literature appears to differentiate between inconsistent discipline and monitoring and supervision as they are commonly regarded as two separate parenting behaviours (Frick et al., 1999). However, factor analysis showed that the items of these two parenting behaviours loaded onto one factor in this sample. A possible reason for this is that parents in this sample may not have differentiated between the relevant items of these two separate parenting behaviours. Perhaps they understood inconsistent discipline and monitoring and supervision as a single form of discipline. It has previously been found that South African parents have expressed confusion over their disciplinary roles (Mandisa, 2007). Alternatively, these may simply be highly correlated parental behaviours. Future research should therefore, explore the conceptual definitions of what South African parents understand discipline and supervision to be. This finding has implications for the content of parenting programmes in South Africa in that different parenting roles must be explicitly defined in order to possibly minimise parental confusion.

Corporal punishment.

We hypothesized that harsh discipline (i.e., corporal punishment) would be positively related to child aggression. We measured corporal punishment in two separate ways: (1) harsh corporal punishment and (2) mild corporal punishment. Harsh corporal punishment consisted of hitting a child with an object. Mild corporal punishment consisted of slapping and spanking a child. Unexpectedly, harsh corporal punishment did not significantly predict child aggression in this study. Therefore, this specific result diverges from previous literature (Barbarin & Richter, 2001; Fite et al., 2006; Frick et al., 1999). A possible explanation for this is social desirability (Fisher, 1993). The fieldworkers reported that parents in this study did not seem to want to admit to using harsh forms of punishment because they wanted to be viewed in a more favourable manner. Moreover, the measure only consisted of one item, which may also have reduced the chances of finding a relationship. Future studies should bear these limitations in mind when deciding on methods for collecting data surrounding sensitive topics.

Mild corporal punishment was found to be directly related to child aggression. This finding confirms the hypothesis that this form of punishment does predict child aggression. Moreover, this finding is aligned with other South African and international literature in that spanking and slapping specifically lead to externalising behaviour problems and later adult violence (Barbarin & Richter, 2001; MacMillan et al., 1999). Social learning theory may be an effective way to explain why mild corporal punishment is a predictor of child aggression; children may learn that this form of aggressive punishment is normal, and therefore, may go on to perpetrate this violent behaviour themselves (Bandura, 1977; MacMillan et al., 1999).

Furthermore, a reason as to why mild as opposed to harsh corporal punishment had a relationship with child aggression might be because parents in this study may have felt more comfortable admitting to slapping and spanking. These behaviours may have been perceived to be more socially acceptable forms of discipline in this sample.

A lack of positive parenting.

Positive parenting had a significant inverse relationship to child aggression, as originally hypothesized. This finding converges with international and national literature in that little positive parenting is a risk factor for aggression in children (Barber et al., 2005; Buschgens et al., 2010; Leoschut & Bonora, 2007). A lack of positive parenting behaviours may prevent children from developing positive internal working models which may result in children who are less sensitive to the needs of others (Booth-LaForce & Kerns, 2009).

Parental Efficacy

We hypothesized that the relationship between parenting behaviours and child aggression would be mediated by parental efficacy. Positive parenting was the only parenting behaviour that was mediated by parental efficacy in this study. Thus, the relationship between a lack of positive parenting and child aggression operates through low levels of parental efficacy. This suggests that parents who reported lower levels of positive parenting were more likely to have aggressive children if they also felt incompetent as parents. Furthermore, our results show that neither inconsistent discipline and supervision, nor mild corporal punishment, were mediated by parental efficacy. Essentially this suggests that these parenting behaviours are only directly related to child aggression. Thus, their relationship with child aggression did not work through an incompetent sense of parenting.

A reason as to why only positive parenting (as opposed to the other parenting behaviours) was mediated might be because parental-efficacy can be understood as a way in which parents perceive their ability to positively influence their children's development and behaviour (Coleman & Karraker, 2003). Perhaps the parents in this sample consciously related their beliefs about positively influencing their children's behaviour to positive parenting practices, more so than with the other parenting behaviours. However, more research needs to explore why parental efficacy only mediates the relationship between positive parenting and child aggression, in order to explain these findings further.

Contextual Stressors

We hypothesized that contextual factors would moderate parental efficacy which would, in turn, affect parenting behaviours. Contextual factors such as violent neighbourhoods, economic hardship and single parenthood are not *direct* causes of poor parenting and child aggression - rather, it is the *stress* associated with these factors which may negatively impact parental efficacy, contributing to poor parenting behaviours (Barbarin & Richter, 2001; Brody et al., 2003; Shumow & Lomax, 2002; van der Merwe et al., 2012). Unexpectedly, our moderation analysis failed to show that parental efficacy was moderated by any of the contextual factors. This was despite the fact that there was much variation in our measure of contextual stressors. What this means is that, within this specific sample, parental efficacy does not change as a result of contextual factors.

Adverse contextual factors have been found to influence parental efficacy through stress and therefore, impact parenting. However, the level of parental stress in this sample that resulted from contextual factors is unknown. This is because no direct measurement of how contextual factors influence stress was determined in this study. Therefore, further

research needs to explore the relationship between contextual factors, stress, and parental efficacy to obtain a better hold on how these factors operate with one another.

Although familial factors have been firmly established to be linked to child aggression in the literature, adverse contextual factors have also been identified as a risk factor of later delinquency and violence (Panday, Ranchod, Ngcaweni, & Seedat, 2012). Of all the contextual factors considered, only perceived neighbourhood violence was found to be significantly related to child aggression. Therefore, single parenthood and economic hardship were not predictors of child aggression in this sample. Social learning theory may be an effective way to explain why perceived neighbourhood violence was related to child aggression: It maintains that children learn and model behaviour through observation (Bandura, 1977). As a result, children living in violent neighbourhoods may model the behaviours they observe or may perceive delinquent and violent behaviours to be appropriate and normal. Therefore, such a relationship may contribute to explaining the intergenerational perpetuation of violence in South Africa. This is congruent with other South African literature in that both perpetration and victimisation are linked to a larger socialisation process whereby, children develop into adults who display behaviour that is dysfunctional (Seedat, Van Niekerk, Jewkes, Suffla & Ratele, 2009).

Implications

This study is central for understanding the causes of aggression in South Africa, and in isiXhosa-speaking populations in particular. The results emphasize the importance of the relationship between parenting behaviours and child aggression in both this language group and Western Cape more broadly. Moreover, it emphasises how important a specific few parenting behaviours (positive parenting, inconsistent discipline and supervision and mild corporal punishment) are to consider in relation to child aggression in isiXhosa-speaking people. As the broader relationship between parenting and child aggression is well established in the international literature, the findings of this study contribute to the cross-cultural literature because of the similarity of the results.

Additionally, the mediating role of parental efficacy appears to have only minimal significance in influencing the relationship between parenting behaviours and child aggression in a South African sample - making it appear less important than the literature suggests. Nevertheless, it does seem to be specifically related to positive parenting behaviours. This implies that isiXhosa parents in South Africa may perceive the relationship between their parenting behaviours and their sense of competency to parent, differently from international samples. Further research is necessary to confirm this.

The applied implications of this study will mostly relate to content and design of parenting programmes for isiXhosa parents in South Africa. Inconsistent discipline and supervision as well as mild corporal punishment are directly related to child aggression and are not mediated by any other variable such as parental efficacy. Therefore, these behaviours should be directly targeted in future parenting programmes as they are important parenting risk factors for child aggression and therefore, later violence in South Africa. Parenting programmes should aim to improve skills regarding effective and consistent supervision and discipline strategies. Moreover, parenting interventions should explicitly convey the adverse effects of mild corporal punishment. The mediating relationship between positive parenting and parental efficacy also has implications for parenting programmes. It can be suggested that in order to improve positive parenting behaviours, parental efficacy skills need to be targeted. In doing so, child aggression in South Africa may be reduced because of the way in which high levels of parental efficacy and positive parenting appear to function protectively. Furthermore, the findings from this study suggest that specific contextual stressors do not moderate parental efficacy. Therefore, components of parenting programmes that target parental efficacy can be standardised and delivered in all contexts.

Lastly, the results of this study relating to mild corporal punishment as a predictor of child aggression hold much value in that they offer further support to policy relating to the banishing of corporal punishment (e.g. spanking and hitting) in South Africa.

Limitations

The cross-sectional nature of this study is limiting because no causality or directionality can be confirmed. Therefore, it is not clear whether ineffective parenting causes child aggression, as opposed to aggressive children triggering poor parenting. Although it is maintained that poor parenting may predict child aggression; it is also well-founded that aggressive and difficult tempered children negatively impact on effective parenting, resulting in parents who display more rejecting and less emotionally responsive behaviours (Kerr & Stattin, 2003). Additionally, with cross-sectional studies the data is obtained within a particular time period. Therefore, this study may have failed to recognise the changing and dynamic nature of all the relationships explored in this study. However, due to time and resource constraints this method remains appropriate for this study.

The use of self-report questionnaires also presented the study with limitations. Problems such as socially desirable answers and response sets, associated with self-report measures, could have possibly biased the results (Fisher, 1993). Furthermore, some of the

scales used in this study were not normed for a South African population. This limits the reliability as well as the validity of this study's results.

Moreover, the non-significance of the moderating relationship between contextual factors and parental efficacy may be explained because we failed to measure stress directly in this study. This meant we could not determine if, and to what extent, contextual factors actually impacted on stress, and thereby parental efficacy in our sample. An extra measure for this would have made completing the questionnaire even longer and in doing so, possibly impacted negatively on the quality of results. However, in future, a direct measure of stress could perhaps be of benefit when exploring the moderating relationship between contextual stressors and parental efficacy.

The sampling procedure used in this study was convenience sampling and therefore, no randomisation occurred. This may have limited the generalizability of our results. Yet, it was suitable for this study as the research was exploratory in nature and aimed to understand the relationships between variables previously unexplored in South Africa.

Lastly, child rearing behaviours may be culturally bound and therefore, this study cannot be generalised to all populations within South Africa. In particular, the external validity of this study is limited to isiXhosa speaking parents within the Western Cape.

Future Directions

There appears to be a gap in the literature surrounding the conceptual definitions of what constitutes different types of parenting behaviours in South Africa. For instance, future South African research should aim for a better understanding of what comprises inconsistent discipline and supervision in order to minimise confusion surrounding this parenting behaviour. Additionally, future studies need to address the moderating relationship between contextual stressors and parental efficacy. Other mediating factors (e.g., parental stress) should also be considered within this relationship in South Africa. We suggest that using a direct measure of stress will assist in understanding the relationship between contextual factors and parental efficacy. What is more, there is a need to norm the psychometric properties of scales in South Africa. Lastly, much more research needs to be conducted on this particular topic in South Africa to confirm the various findings of this study.

Summary and Conclusion

In conclusion, it is well founded that there is a relationship between child aggression, conduct problems and oppositional behaviour, and later delinquency and violent behaviours (Farrington, 1988; Hutchings et al., 2006; Stormshak et al., 2000). Consistent with international literature, this study has established that poor parenting is a significant

contributor to this relationship in South Africa. A lack of positive parenting, mild corporal punishment as well as inconsistent discipline and supervision are significant predictors of child aggression in this context. In addition, a lack of positive parenting is mediated by low levels of parental efficacy. Very little is known about the relationship between parenting behaviours, parental efficacy, contextual factors, and child aggression in isiXhosa populations in South Africa, so this study contributes significantly to this literature. Additionally, it has the potential to help tailor parenting programmes - child aggression will be reduced if parents learn how to discipline and supervise consistently, without using corporal punishment. This study also suggests that parental efficacy can be improved regardless of context. Ultimately, this study may contribute to understanding how to stem the high violence levels in South Africa.

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Appendix A

Informed Consent

Consent to participate in a research study:

What affects children's aggression?

Dear Parent,

Study Purpose

You are being asked to participate in a research study being conducted by researchers from the Department of Psychology at the University of Cape Town. The purpose of this study is to understand which factors influence children's development.

Study Procedures

If you decide to participate in this study, you will be interviewed for approximately 40 minutes. The interview will include questions about the way you parent, your child's behaviour, and other things such as neighbourhood violence that may affect your family.

Possible risks and benefits

There are no real risks involved in this study. You may find some questions a bit upsetting. The interview will be kept absolutely confidential by the research team, and you will not be identified in any reports. You will be compensated with a R30 supermarket voucher for your time. If there are any concerns about your parenting, we will refer you to a social worker for support.

Alternatives

You may choose not to participate in this study. Your decision will not affect you in any way, and will not affect any services you receive.

Voluntary Participation

Participation in this study is completely voluntary. You are free to refuse to answer any question. You are free to change your mind and discontinue participation at any time.

Confidentiality

Information about you and your child for this study will be kept confidential. You and your child's consent form and other identifying information will be kept in locked filing cabinets or on password protected computers. The information obtained will not be disclosed to anybody else but the researchers involved. Any reports or publications about this study will not identify you or any other study participant.

Questions

Any study-related questions or problems should be directed to the following researchers:

Professor Catherine Ward (021 650 3422)

Questions about your rights as a study participant, comments or complaints about the study may also be presented to Ms. Rosalind Adams (021 650 3417). If you are feeling distressed as a result of your participation you can get help from the Parent Centre for help (021 762 0116).

Please fill out the last page; you are welcome to keep the first two pages.

I have read the consent form and am satisfied with my understanding of the study, its possible risks, benefits and alternatives. I hereby voluntarily consent to the participation of me in the research study as described.

---------- ----------

Signature of participant (parent) Date

---------- ----------

Witness

_____

Appendix B

Parent Questionnaire

DATE:

This questionnaire will help us understand how you parent, and the challenges you face in parenting your children. The first questionnaire is really all about this.

Please tell us how many children you have in your home: _____

Now for the next part, please choose one child who goes to school, and answer the questions about that child only. [Interviewer, if there are several school-going children in the house, ask the parent to choose the youngest child; this child must be between the ages of 6 and 18.]

What is the name your child you have chosen? _____

How old is this child? _____

Is this child a girl or a boy? _____

Alabama Parenting Questionnaire

What relation are you to this child? Biological Parent ☐ Step Parent ☐ Grandparent ☐

Adoptive Parent ☐ Foster Parent ☐ Other relation: _____

Is there any other caregiver present? Yes ☐ No ☐

If yes, who is that?

_____

Directions: The following are a numbers of statements about your family. Please rate each item as to show how often it typically occurs in your home. The possible answers are Never (1), Almost never (2), Sometimes (3), Often (4), Always (5). PLEASE ANSWER ALL ITEMS.

		Never	Almost Never	Sometimes	Often	Always
1	You have a friendly talk with your child	1	2	3	4	5
2	You let your child know when he/she is doing a good job with something.	1	2	3	4	5
3	You threaten to punish your child and then do not actually punish him/her.	1	2	3	4	5
4	You volunteer to help with special activities that your child is involved in (such as sports, church youth groups).	1	2	3	4	5
5	You reward or give something extra to your child for obeying you or behaving well.	1	2	3	4	5
6	Your child fails to leave a note or to let you know where he/she is going.	1	2	3	4	5
7	You play games or do other fun things with your child.	1	2	3	4	5
8	Your child talks you out of being punished after he/she has done something wrong.	1	2	3	4	5
9	You ask your child about his/her day in school.	1	2	3	4	5
10	Your child stays out in the evening past the time he/she is supposed to be home.	1	2	3	4	5

		Never	Almost Never	Sometimes	Often	Always
11	You help your child with his/her homework.	1	2	3	4	5
12	You feel that getting your child to obey you is more trouble than it's worth.	1	2	3	4	5
13	You compliment your child when he/she does something well.	1	2	3	4	5
14	You ask your child what his/her plans are for the coming day.	1	2	3	4	5
15	You take your child to a special activity.	1	2	3	4	5
16	You praise your child if he/she behaves well.	1	2	3	4	5
17	Your child is out with friends you don't know.	1	2	3	4	5
18	You hug or kiss your child when he/she does something well.	1	2	3	4	5
19	Your child goes out without a set time to be home.	1	2	3	4	5
20	You talk to your child about his/her friends.	1	2	3	4	5
21	Your child is out after dark without an adult with him/her.	1	2	3	4	5
22	You let your child out of a punishment early (i.e. you send them to bed without supper, and in the end you	1	2	3	4	5

		Never	Almost Never	Sometimes	Often	Always
	do give them food).					
23	Your child helps plan family activities.	1	2	3	4	5
24	You get so busy that you forget where your child is and what he/she is doing.	1	2	3	4	5
25	Your child is not punished when he/she has done something wrong.	1	2	3	4	5
26	You attend PTA meetings, parent/teacher conferences, or other meetings at your child's school.	1	2	3	4	5
27	You tell your child that you like it when he/she helps out around the house.	1	2	3	4	5
28	You don't check that your child comes home at the time she/he was supposed to.	1	2	3	4	5
29	You don't tell your child where you are going.	1	2	3	4	5
30	Your child comes home from school more than an hour past the time you expect him/her.	1	2	3	4	5
31	The punishment you give your child depends on your	1	2	3	4	5

		Never	Almost Never	Sometimes	Often	Always
	mood.					
32	Your child is at home without adult supervision.	1	2	3	4	5
33	You spank your child with your hand when he/ she has done something wrong	1	2	3	4	5
34	You ignore your child when he/she is misbehaving.	1	2	3	4	5
35	You slap your child when he/she has done something wrong.	1	2	3	4	5
36	You take away privileges or money from your child as a punishment.	1	2	3	4	5
37	You send your child to his/her room as a punishment.	1	2	3	4	5
38	You hit your child with a belt, whip, stick or other object when he/she has done something wrong.	1	2	3	4	5
39	You yell or scream at your child when he/she has done something wrong.	1	2	3	4	5
40	You calmly explain to your child why his/her behavior was wrong when he/she misbehaves.	1	2	3	4	5
41	You use time out (make him/her sit or stand in a	1	2	3	4	5

		Never	Almost Never	Sometimes	Often	Always
	corner) as a punishment.					
42	You give your child extra chores as a punishment.	1	2	3	4	5

Bringing up children is difficult. Many parents do not do some things for their children that they should do. For example, a parent might not take an interest in how well the child is doing in school, or they might leave the child alone when it is dangerous to do that.

Please answer the questions about things you did or did not do in the past year. Please answer in terms of your agreement with the statements. Do you strongly agree, agree, disagree to strongly disagree?

MOTHER-CHILD NEGLECT SCALE (SHORT FORM)					
		Strongly Agree	**Agree**	**Disagree**	**Strongly Disagree**
1	I kept my child clean.				
2	I made sure my child went to school.				
3	I did not care if my child got into trouble at school.				
4	I gave my child enough clothes to keep him or her warm.				
5	I helped my child when he or she had problems.				
6	I comforted my child when he or she was upset.				

7	I helped my child to do his or her best.				
8	I helped my child with homework.				

CHILD BEHAVIOUR CHECK LIST

Below is a list of items that describe children and youths. For each item that describes your child ***now or within the past 6 months***, please mark the ***2*** if the item is ***very true or often true*** of your child. Mark the ***1*** if the item is ***somewhat or sometimes true*** of your child. If the item is **not true** of your child, mark the **0**. Please answer all items as well as you can, even if some do not seem to apply to your child.

0 = Not True (as far as you know) **1 = Somewhat or Sometimes True**
2 = Very True or Often True

☐ 0 ☐ 1 ☐ 2 2. Drinks alcohol without parents' approval (describe):	☐ 0 ☐ 1 ☐ 2 23. Disobedient at school
☐ 0 ☐ 1 ☐ 2 3. Argues a lot	☐ 0 ☐ 1 ☐ 2 26. Doesn't seem to feel guilty after misbehaving
☐ 0 ☐ 1 ☐ 2 16. Cruelty, bullying, or meanness to others	☐ 0 ☐ 1 ☐ 2 28. Breaks rules at home, school, or elsewhere
☐ 0 ☐ 1 ☐ 2 19. Demands a lot of attention	☐ 0 ☐ 1 ☐ 2 37. Gets in many fights
☐ 0 ☐ 1 ☐ 2 20. Destroys his/her own things	☐ 0 ☐ 1 ☐ 2 39. Hangs around with others who get in

☐ 0 ☐ 1 ☐ 2 21. Destroys things belonging to his/her family or others ☐ 0 ☐ 1 ☐ 2 22. Disobedient at home	trouble ☐ 0 ☐ 1 ☐ 2 43. Lying or cheating ☐ 0 ☐ 1 ☐ 2 57. Physically attacks people
☐ 0 ☐ 1 ☐ 2 63. Prefers being with older kids ☐ 0 ☐ 1 ☐ 2 67. Runs away from home ☐ 0 ☐ 1 ☐ 2 68. Screams a lot ☐ 0 ☐ 1 ☐ 2 72. Sets fires ☐ 0 ☐ 1 ☐ 2 73. Sexual problems (describe):	
☐ 0 ☐ 1 ☐ 2 81. Steals at home ☐ 0 ☐ 1 ☐ 2 82. Steals outside the home ☐ 0 ☐ 1 ☐ 2 86. Stubborn, sullen, or irritable ☐ 0 ☐ 1 ☐ 2 87. Sudden changes in mood or feelings ☐ 0 ☐ 1 ☐ 2 88. Sulks a lot	☐ 0 ☐ 1 ☐ 2 94. Teases a lot ☐ 0 ☐ 1 ☐ 2 95. Temper tantrums or hot temper ☐ 0 ☐ 1 ☐ 2 96. Thinks about sex too much ☐ 0 ☐ 1 ☐ 2 97. Threatens people ☐ 0 ☐ 1 ☐ 2 99. Smokes, chews, or sniffs tobacco

Parent Sense of Competence (PSC)

Listed below are a number of statements about how you feel about parenting. Please respond to each item, indicating your agreement or disagreement. Please answer the questions using the following scale:

Strongly Agree 1 **Agree 2** **Slightly Agree 3** **Slightly Disagree 4** **Disagree 5** **Strongly Disagree 6**

1	The problems of taking care of a child are easy to solve once you know how your actions affect your child, an understanding I have acquired.	1	2	3	4	5	6
6	I would make a fine model for a new mother/father to follow in order to learn what she/he would need to know in order to be a good parent.	1	2	3	4	5	6
7	Being a parent is manageable, and any problems are easily solved.	1	2	3	4	5	6
10	I meet my own personal expectations for expertise in caring for my child.	1	2	3	4	5	6
11	If anyone can find the answer to what is troubling my child, I am the one.	1	2	3	4	5	6
13	Considering how long I have been a parent, I feel thoroughly familiar with this role.	1	2	3	4	5	6
15	I honestly believe I have all the skills necessary to be a good parent to my child.	1	2	3	4	5	6
17	Being a good mother is a reward in itself.	1	2	3	4	5	6

HOUSEHOLD INVENTORY How many of the following do you have in your household at this time? **Instructions: (to the interviewer). Please check the boxes (√) where they are provided. Otherwise follow the instructions that precede each section.**			
1. Running water inside the house	☐	Electricity inside the house	☐
2. Flushing toilet inside the house	☐	Radio/Hi-fi	☐
Car	☐	Television	☐
Fridge	☐	Video machine/DVD	☐
Microwave Oven	☐	DSTV/ Satellite	☐
Washing machine	☐	Computer	☐
Landline telephone	☐	Internet	☐
Cellphone	☐		

The following set of questions refers to your sources of income.	
7	**Employment Status:**

	☐ working or ☐ not working ☐ part-time or ☐ formal e.g. company ☐ full time ☐ informal e.g. flea- market stall
8	**Source/s of Income: (Tick all that applies)** ☐ work ☐ government pension ☐ partner/spouse ☐ child support grant ☐ disability grant ☐ money from family ☐ no income ☐ other (Specify):
	How long have you been employed for? If unemployed how long have you been unemployed for? _____

The next set of questions will refer to your food intake.

	Hunger Scale	**Yes**	**No**
1	**Does your household ever run out of money to buy food?**	☐	☐

	a. Has it happened in the past 30 days?	☐	☐
	b. Has it happened 5 or more days in the past 30 days?	☐	☐
2	**Do you ever cut the size of meals or skip any meals because there is not enough food in the house?**	☐	☐
	a. Has it happened in the past 30 days?	☐	☐
	b. Has it happened 5 or more days in the past 30 days?	☐	☐
3	**Do you or any of your children ever go to bed hungry because there is not enough money to buy food?**	☐	☐
	a. Has it happened in the past 30 days?	☐	☐
	b. Has it happened 5 or more days in the past 30 days?	☐	☐
4	Are your children regularly getting food from somewhere else (somewhere other than home)? ☐ School ☐ Soup kitchen Somewhere else		

I'd like you to think about the neighbourhood you live in. I am going to read you some general statements about neighbourhoods. Please tell me how each statement fits the way you feel about your neighbourhood. Do you strongly agree, agree, are not sure, disagree or strongly disagree with the following statements?

How long have you lived in your neighbourhood? _____ years _____ months

Does your neighbourhood have a name? If yes, _____

	Perceived Neighborhood Scale (Crime Subscale)					
		Strongly Agree (1)	**Agree (2)**	**Not Sure (3)**	**Disagree (4)**	**Strongly Disagree (5)**
1	There are trouble makers hanging around in my neighbourhood.					
2	There is public drinking in my neighbourhood.					
3	There is open drug abuse/dealing in my neighbourhood.					
4	It's safe to walk alone in my neighbourhood at night.					
5	Some friends and relatives don't visit me at home because they don't feel safe.					
6	People are scared of being robbed in my neighbourhood.					
7	People are scared of being raped in my neighbourhood.					

8	People are scared of being mugged in my neighbourhood.					
9	People are scared of being murdered in my neighbourhood.					

Appendix C

Assumption of Normality

Child aggression.

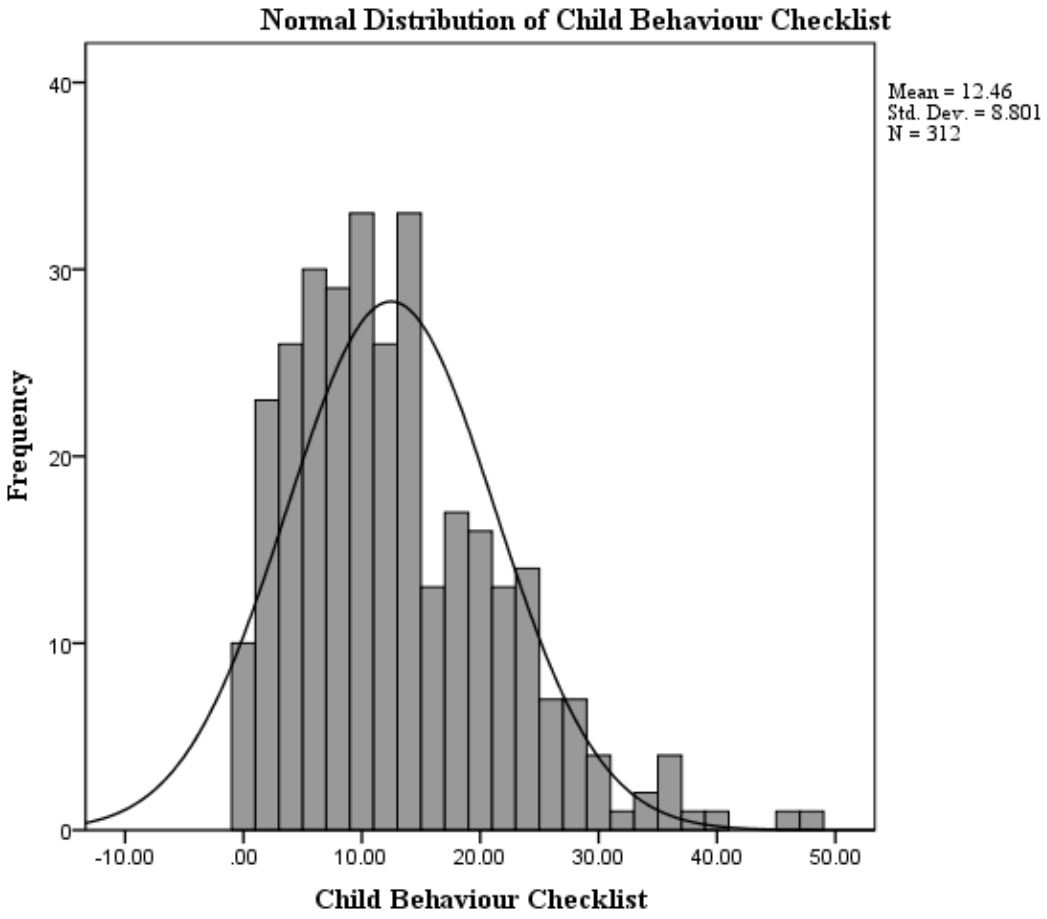

Figure1. The normal distribution of the Child Behaviour Checklist. Figure 1 shows that the Child Behaviour Checklist was sufficiently normally distributed for further analyses to take place.

Parenting behaviours.

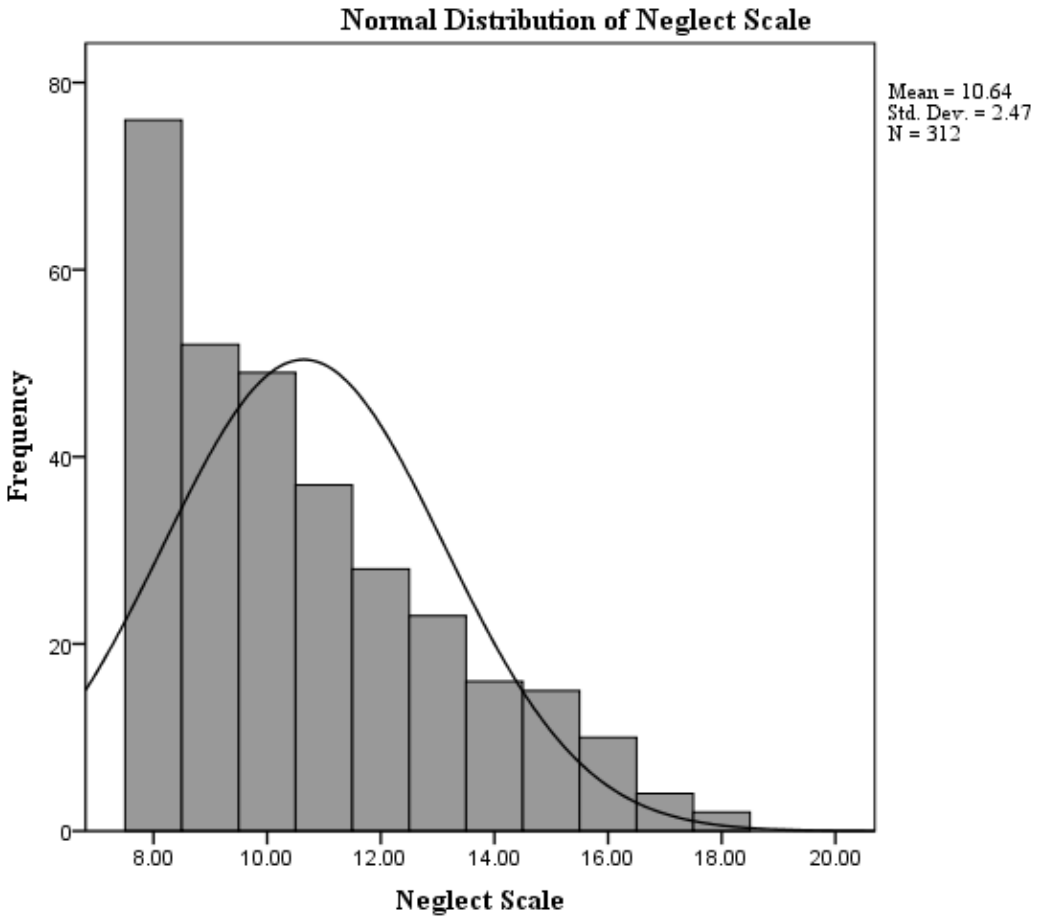

Figure2. The normal distribution of the Neglect Scale. Figure 2 shows how the Neglect Scale is positively skewed and therefore, required a square root transformation in order for the data to be closer to normality (Tabachnick & Fidell, 1996).

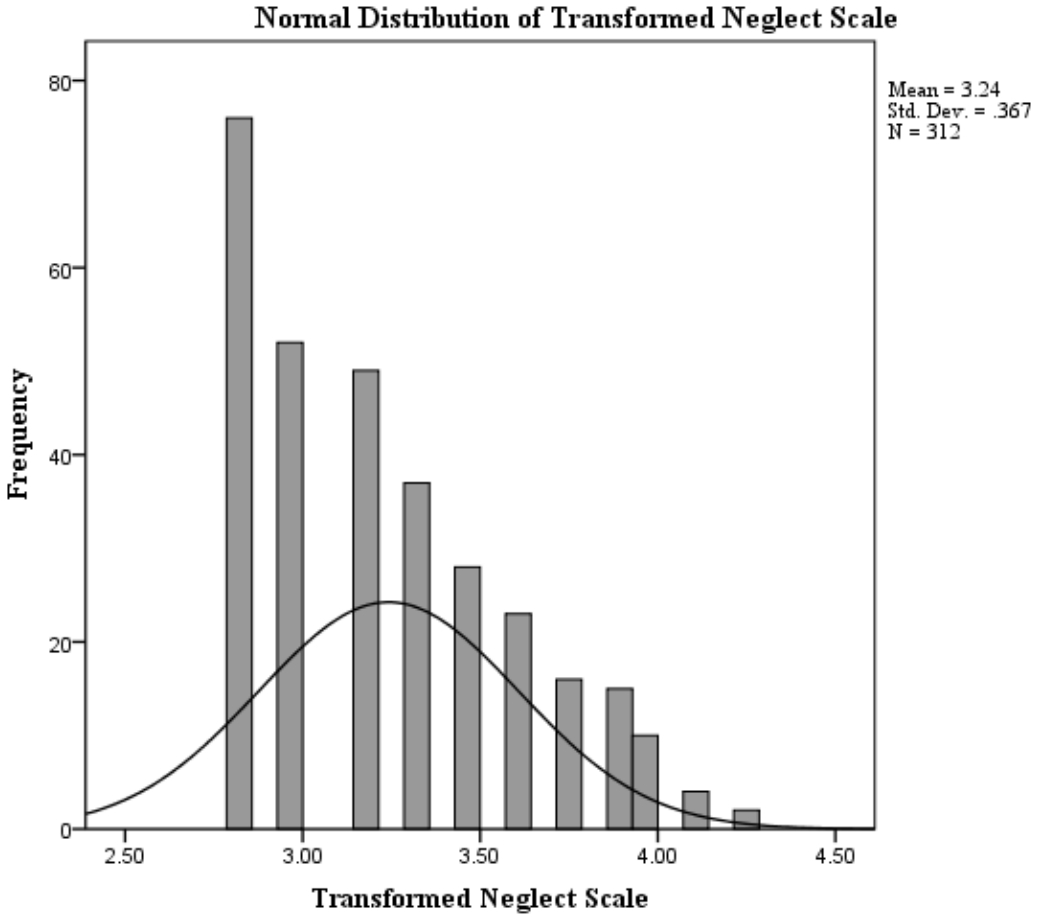

Figure 3. The normal distribution of the square root transformation of the Neglect Scale. Figure 3 shows that the data is closer to normality and therefore, was used in further analyses.

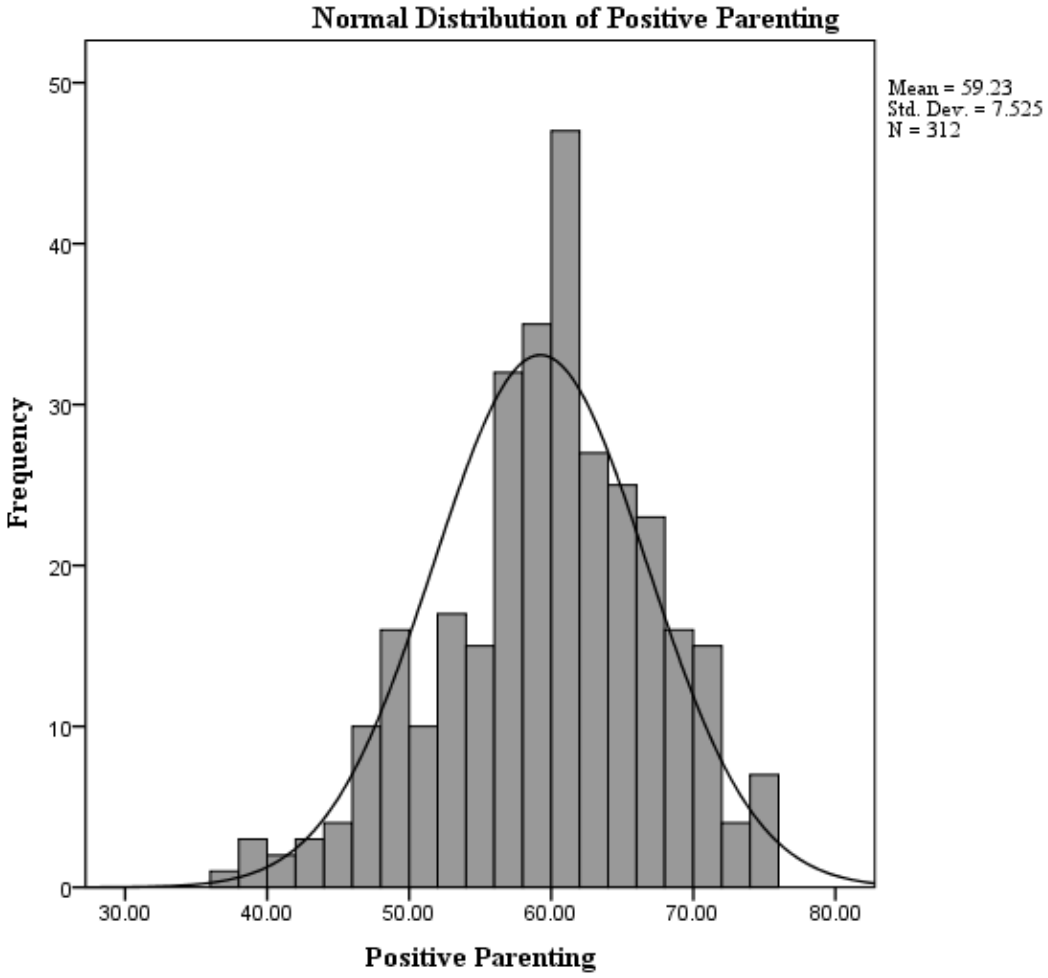

Figure 4. The normal distribution of positive parenting. Figure 4 shows that the parenting behaviour of positive parenting is sufficiently normally distributed for further analyses to take place.

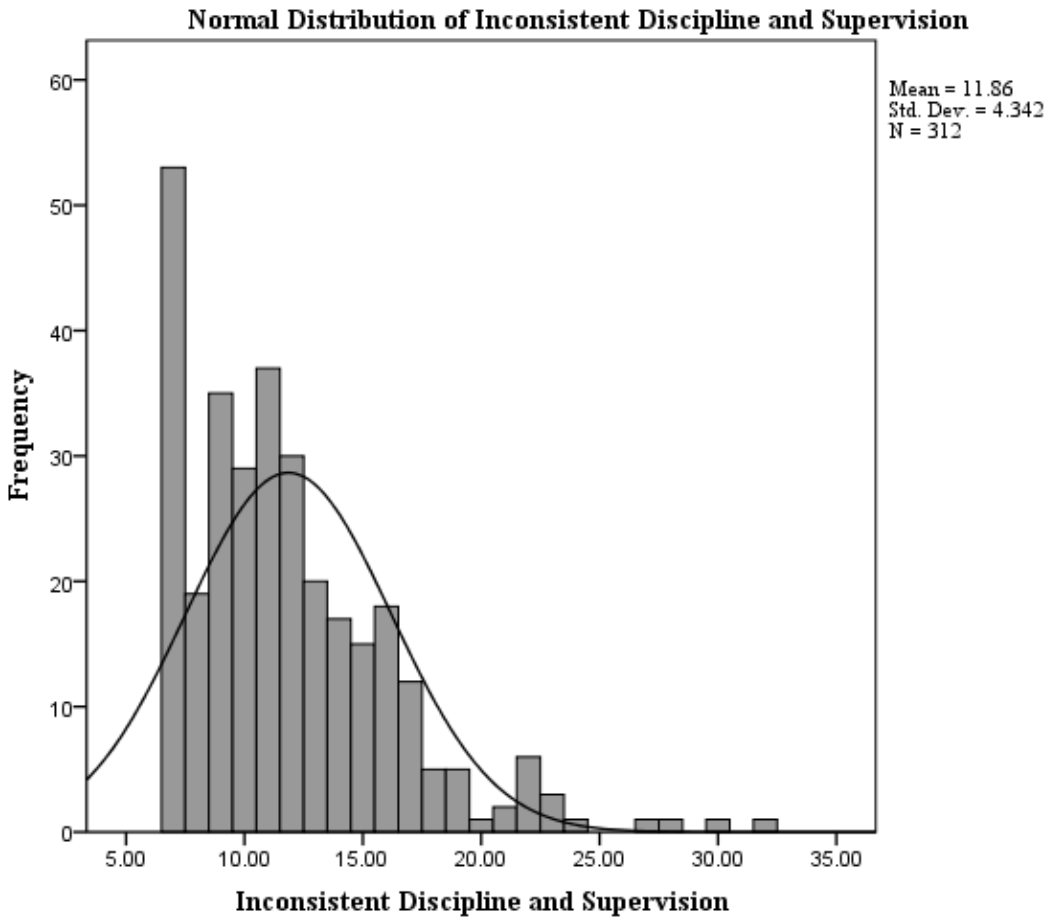

Figure 5. The normal distribution of inconsistent discipline and supervision**.** Figure 5 shows that the parenting behaviour of inconsistent discipline and supervision is not perfectly normally distributed, but this would be expected due to the sensitive nature of the item. Normality of this item was sufficient for a regression.

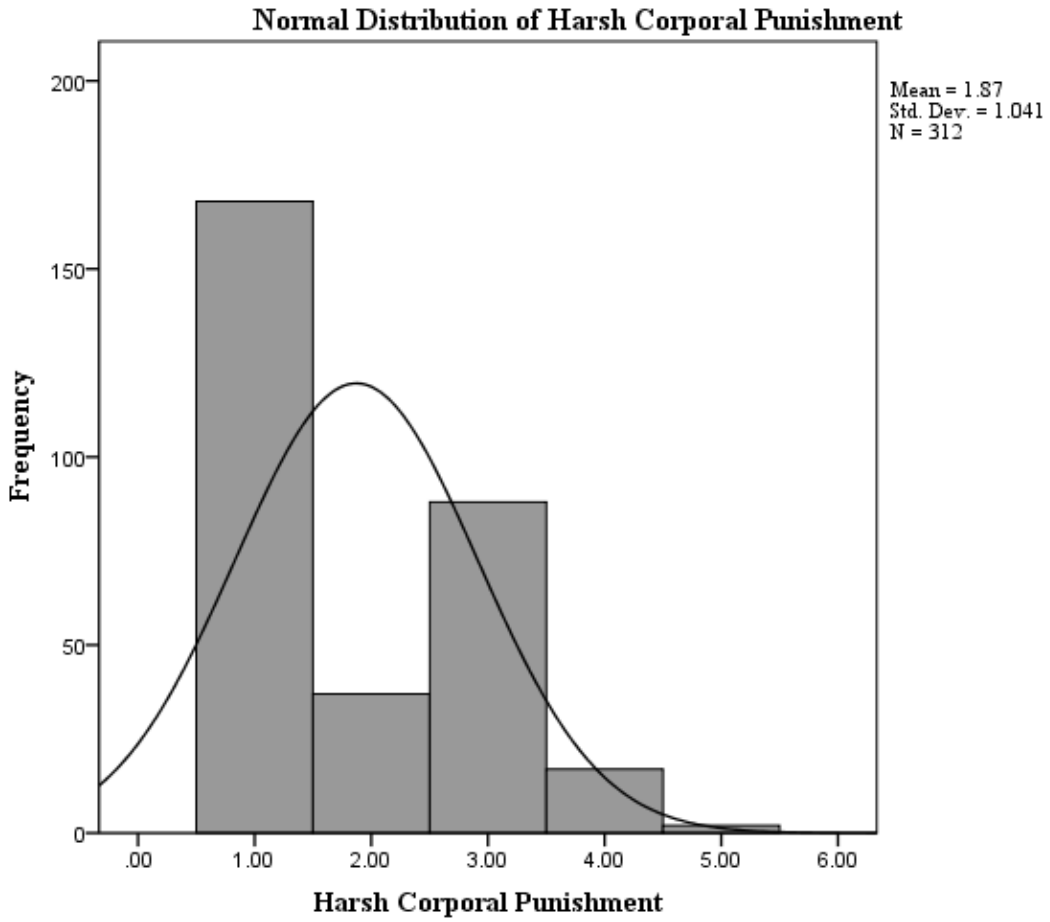

Figure 6. The normal distribution of harsh corporal punishment**.** Figure 6 shows that the parenting behaviour of harsh corporal punishment is not well normally distributed, but this would be expected due to the sensitive nature of the item. Normality of this item was sufficient for a regression.

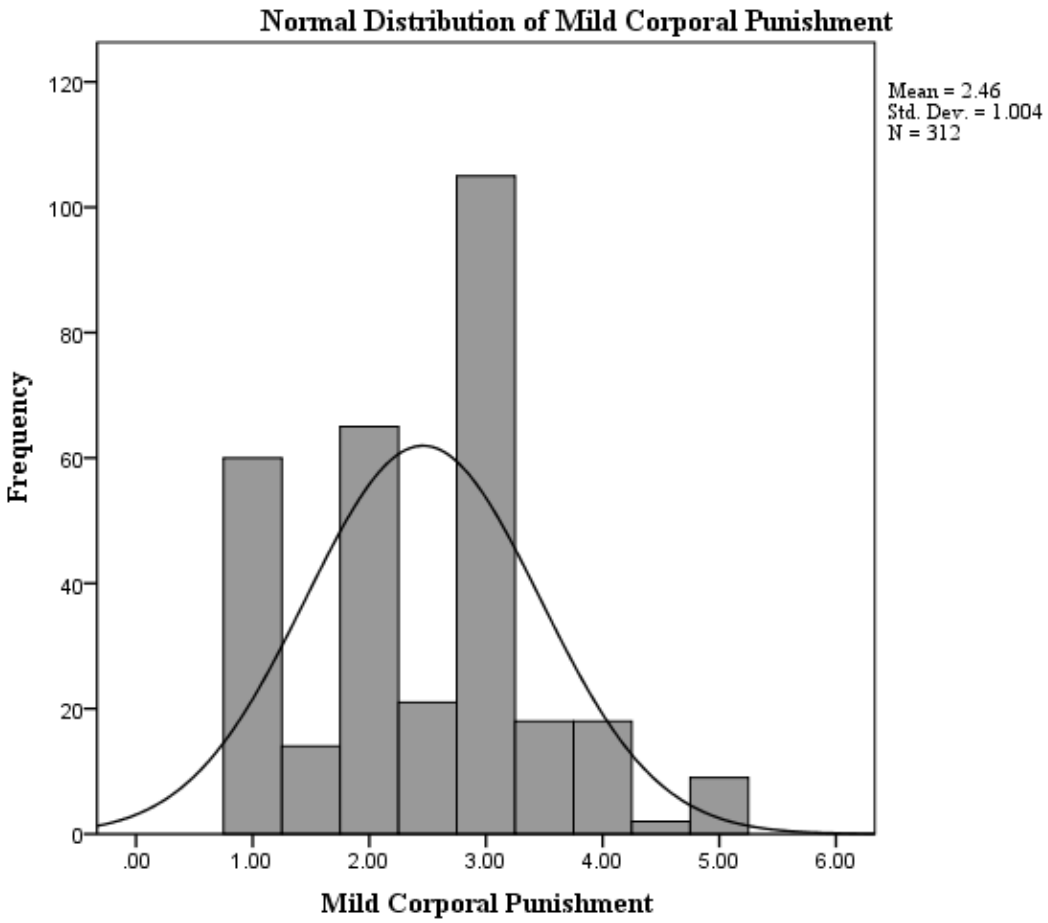

Figure 7. The normal distribution of mild corporal punishment. Figure 7 shows that mild corporate punishment is sufficiently normally distributed for further analyses to take place.

Parental efficacy.

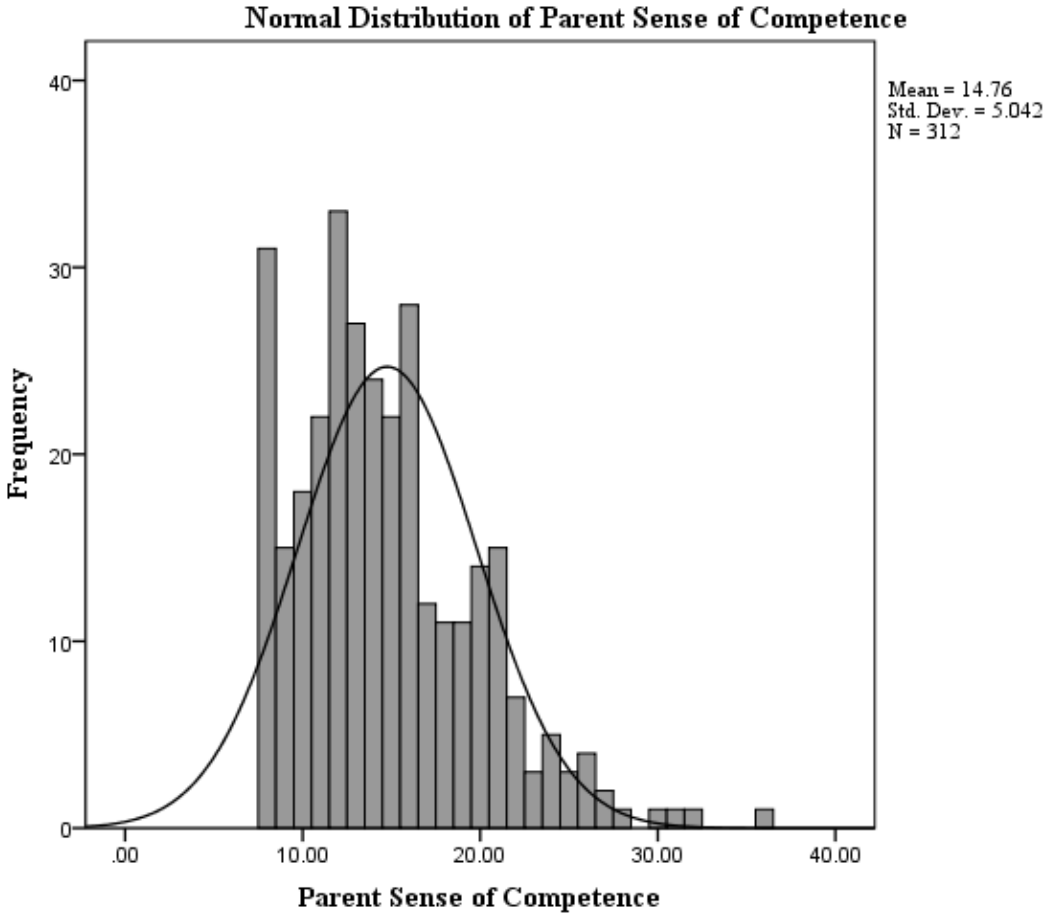

Figure 8. The normal distribution of Parent Sense of Competence Scale. Figure 8 shows that the data is not normally distributed and therefore, a transformation was required in order to achieve normally distributed data. For this data it was appropriate to log transform it (Tabachnick & Fidell, 1996).

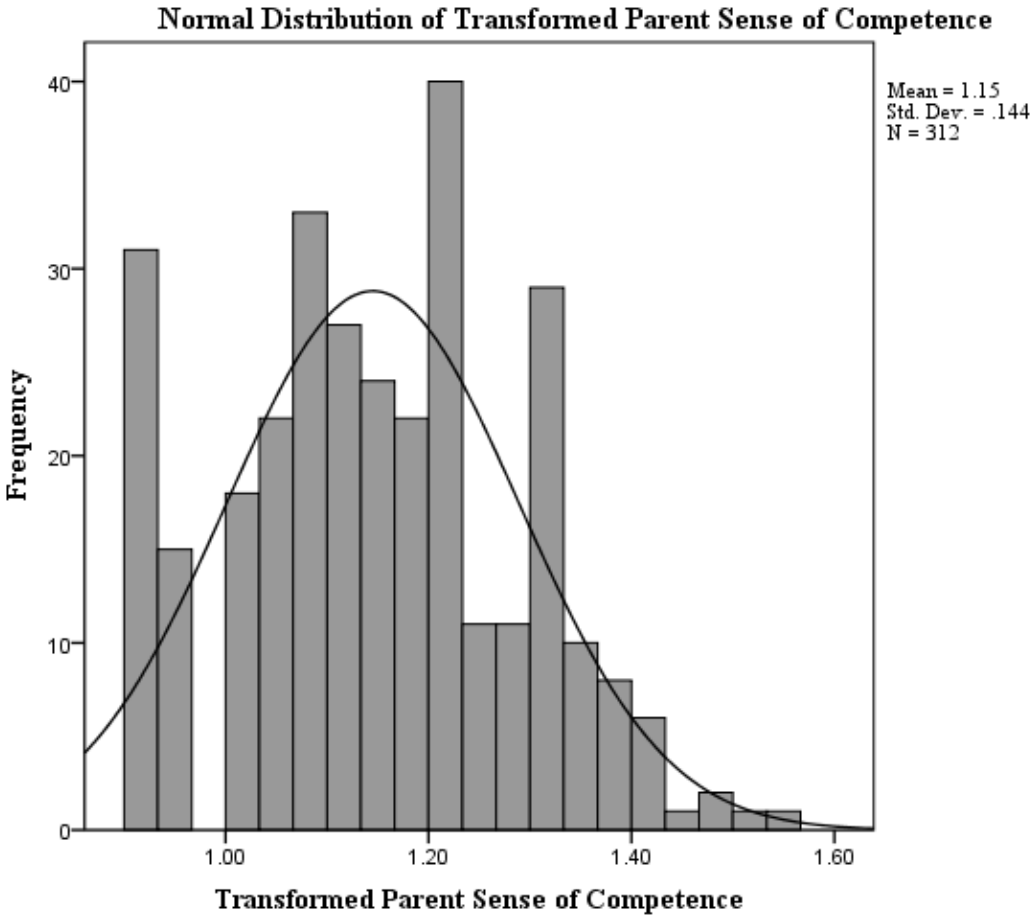

Figure 9. The normal distribution of the log transformation Parent Sense of Competence Scale. Figure 9 shows that after transforming the data there is a better approximation of normal distribution. Therefore, the transformed variable was used in further analyses.

Contextual stressors.

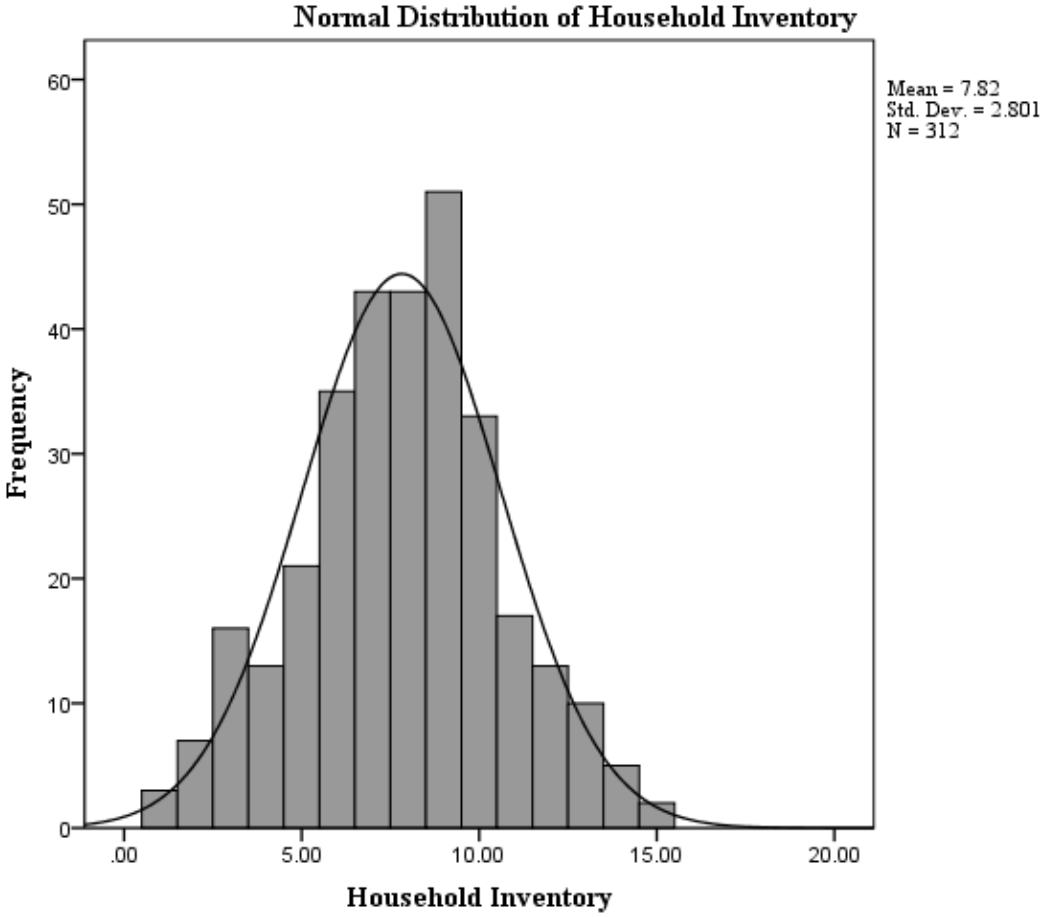

Figure 10. The normal distribution of Household Inventory. Figure 10 shows that the Household Inventory is appropriately normally distributed for further analyses to take place.

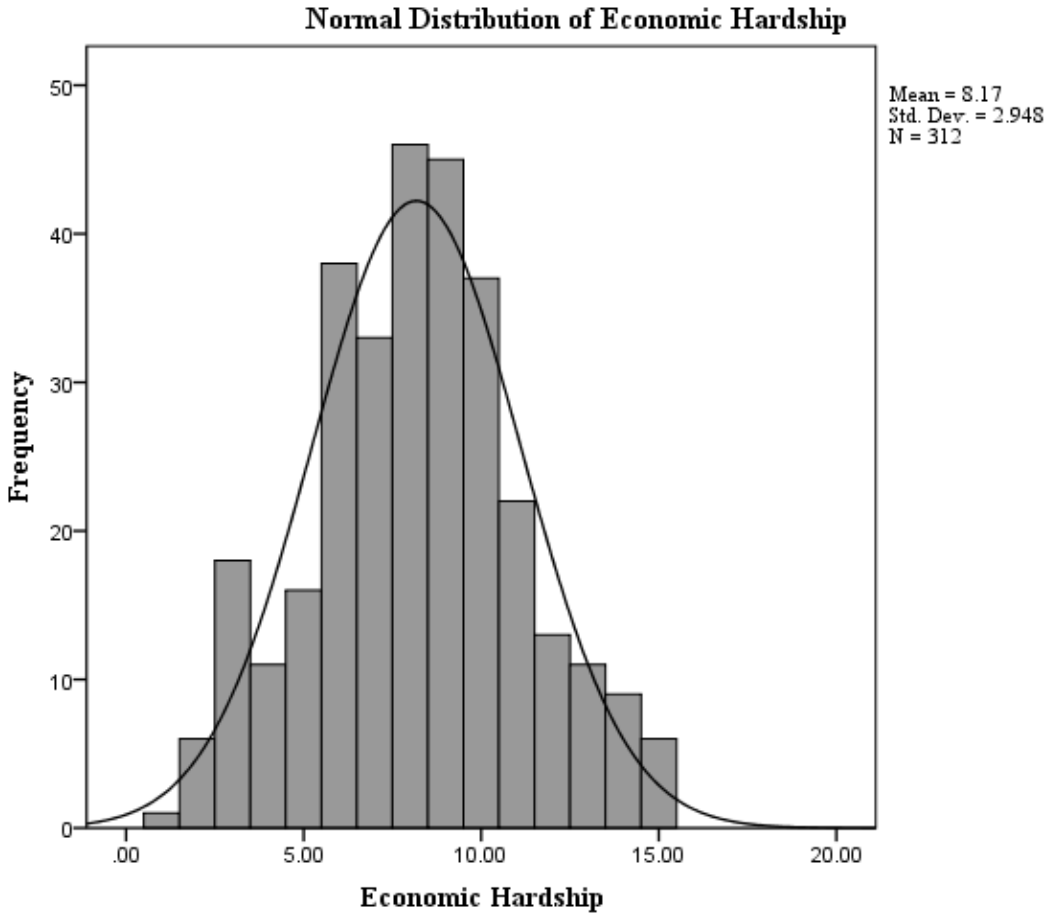

Figure 11. The normal distribution of economic hardship. Figure 11 shows that further analyses are able to take place because this scale is satisfactorily normally distributed as well.

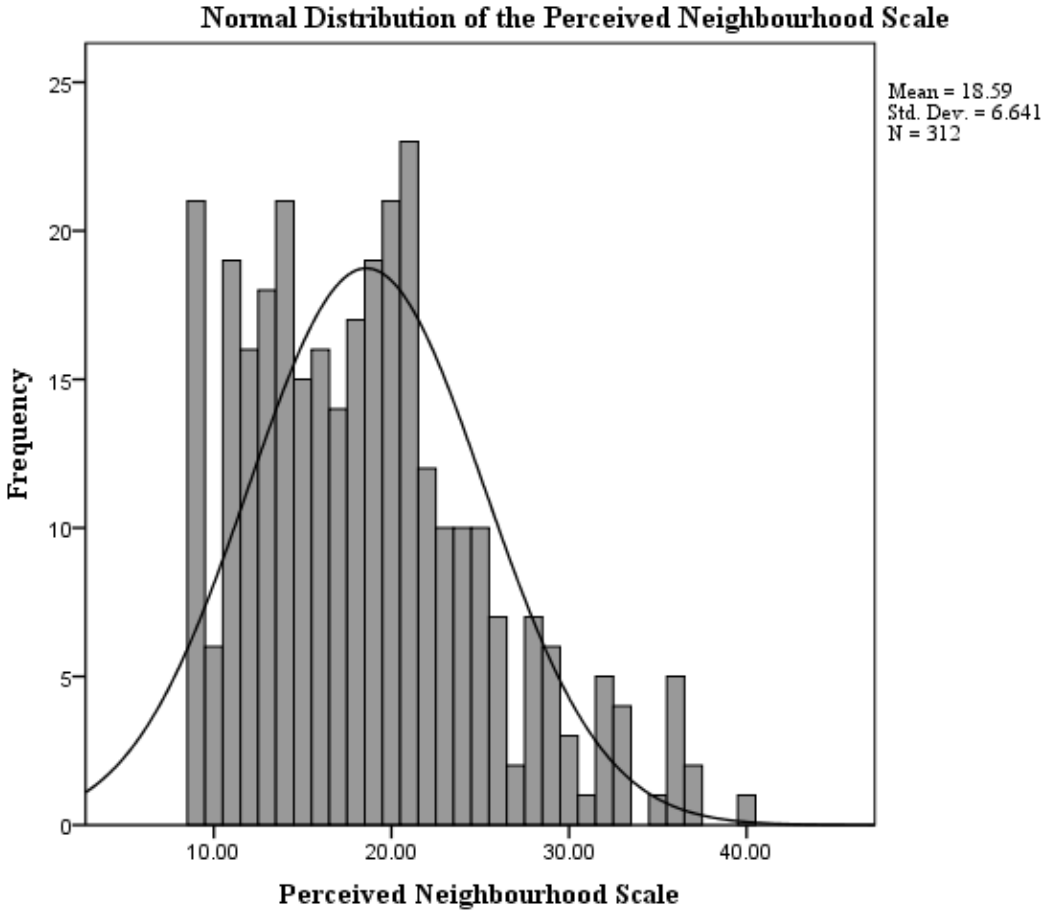

Figure 12. Normal distribution of Perceived Neighbourhood Scale. Figure 12 shows that the Perceived Neighbourhood Scale is not sufficiently normally distributed for further analyses to take place. Therefore, we conducted a log transformation to correct for this (Tabachnick & Fidell, 1996).

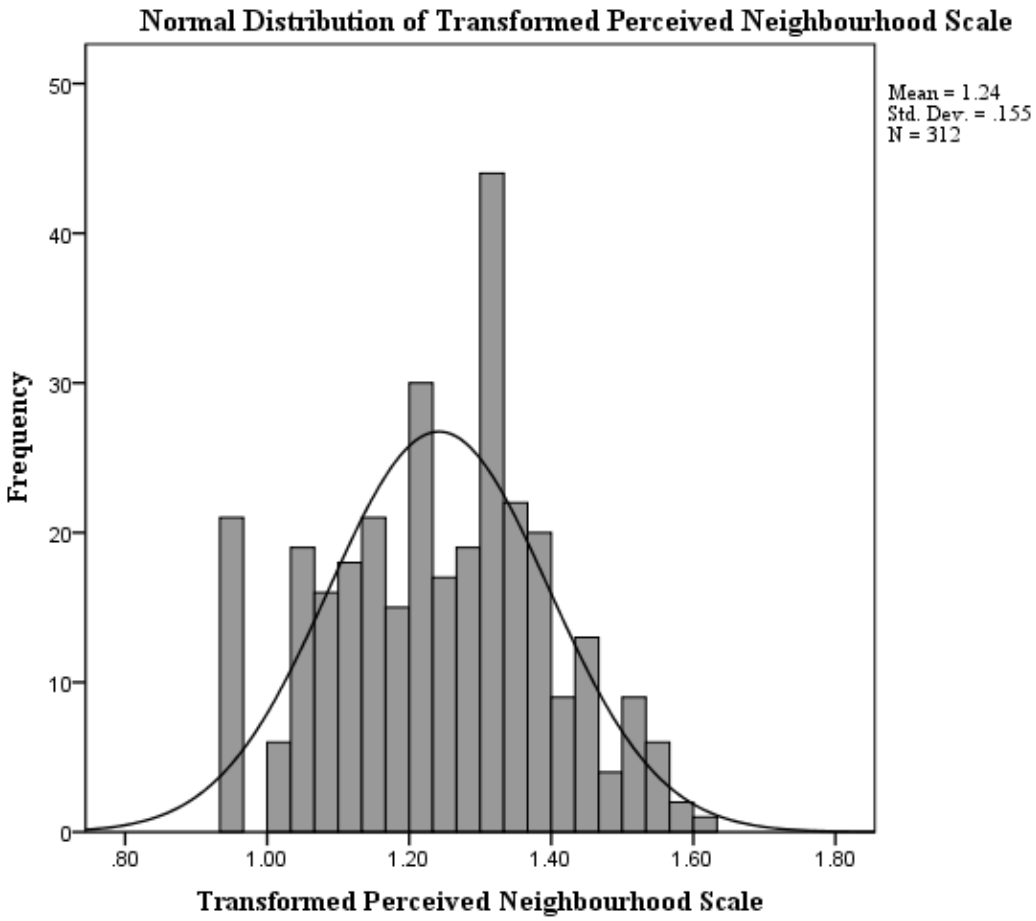

Figure 13. Normal distribution of transformed Perceived Neighbourhood Scale.

Figure 13 shows how the log transformation significantly improved the distribution of the scale- making it a better approximation of normality.

Appendix D

Skewness and Kurtosis

Table 1 (below) shows the skewness and kurtosis statistics for each of the scales, including for those that were transformed. It is clear that the scales used had adequate skewness and kurtosis.

Table 1

The Skewness and Kurtosis Statistics for All the Scales Used.

Scale	Skewness	Kurtosis
Child Behaviour Checklist	0.99	1.10
Neglect Scale	0.84	-0.13
Transformed Neglect Scale	0.67	-0.50
APQ Positive Parenting	-0.38	0.01
APQ Inconsistent Discipline and Supervision	1.36	2.65
APQ Mild Corporal Punishment	0.20	-0.36
APQ Harsh Corporal Punishment	0.69	-0.85
Parent Sense of Competence	0.92	0.99
Transformed Parent Sense of Competence	0.11	-0.54
Household Inventory	-0.04	-0.15
Economic Hardship	0.05	-0.25
Perceived Neighbourhood Scale	0.72	0.18
Transformed Perceived Neighbourhood Scale	-0.05	-0.65

Appendix E

Bivariate Analyses

Table 2

Bivariate Relationship Between Predictor Variables and Child Aggression

	Child aggression				
Independent Variables	*B* (*SE*)	Constant	*t*	R^2	F
Age	-0.04 (0.14)	13.96	-0.30	0.00	0.29
Gender	-0.76 (1.03)	13.96	-0.74	0.00	0.29
Neglect	-0.90 (1.36)	15.36	-0.66	0.00	0.43
APQ Positive Parenting	-0.22* (0.07)	25.18	-3.29	0.03	10.83
APQ Inconsistent Discipline and Supervision	0.80** (0.11)	3.01	7.53	0.16	56.69
APQ Mild Corporal Punishment	2.00** (0.49)	7.54	4.12	0.05	16.99
APQ Harsh Corporal Punishment	0.73 (0.48)	11.09	1.53	0.01	2.34
Parent Sense of Competence	13.23** (3.39)	-2.69	3.91	0.05	15.25
Single Parenting	1.02 (1.06)	11.78	0.97	0.00	0.94
Economic Hardship	0.06 (0.17)	11.93	0.38	0.00	0.15
Perceived Neighbourhood Scale	-13.16** (3.14)	28.81	-4.20	0.05	17.63

*$p<.05$. **$p<.001$.

Appendix F

Assumptions for Mediation Regression Analysis

Zero variance.

None of the descriptive statistics showed a standard deviation of 0 (Child Behaviour Checklist, *SD*=8.80; Positive Parenting, *SD*= 7.52; Parent Sense of Competency, *SD*= 5.04). Therefore this assumption is upheld.

Multicollonearity.

Table 3 (below) shows that there was no evidence for multicollinearity, in fact correlations between the independent variables and the dependent variable were actually quite low.

Table 3

Pearson Correlation Coefficients between Independent Variables and Dependent Variable

		Child Behaviour Checklist	Positive Parenting	Parent Sense of Competence
Pearson Correlation (r)	Child Behaviour Checklist	1.00		
	Positive Parenting	-0.18	1.00	
	Parent Sense of Competence	0.22	-0.37	1.00

Influential cases (distance statistics).

There were no influential cases apparent.

Outliers.

Table 4 shows that only four standardised residuals had *z* scores greater than three, and could therefore, be classified as outliers. Seeing as our final sample size (*n*=312) was so large and the number of outlying residuals was so small we can safely assume that these cases exerted no undue influence on the regression.

Table 4

Standardised Residuals of Outliers

Casewise Diagnostics[a]				
Case Number	Standardised Residual	Child Behaviour Checklist	Predicted Value	Residual
231	3.01	35.00	9.21	25.79
245	3.29	36.00	7.82	28.18
263	4.11	48.00	12.82	35.18
272	3.91	46.00	12.53	33.47

a. Dependent Variable: Child Behaviour Checklist

Normality of residuals.

Figure 14 (below) represents the distribution of the standardised residuals. The graph shows that these residuals are largely normally distributed, therefore this assumption is also upheld.

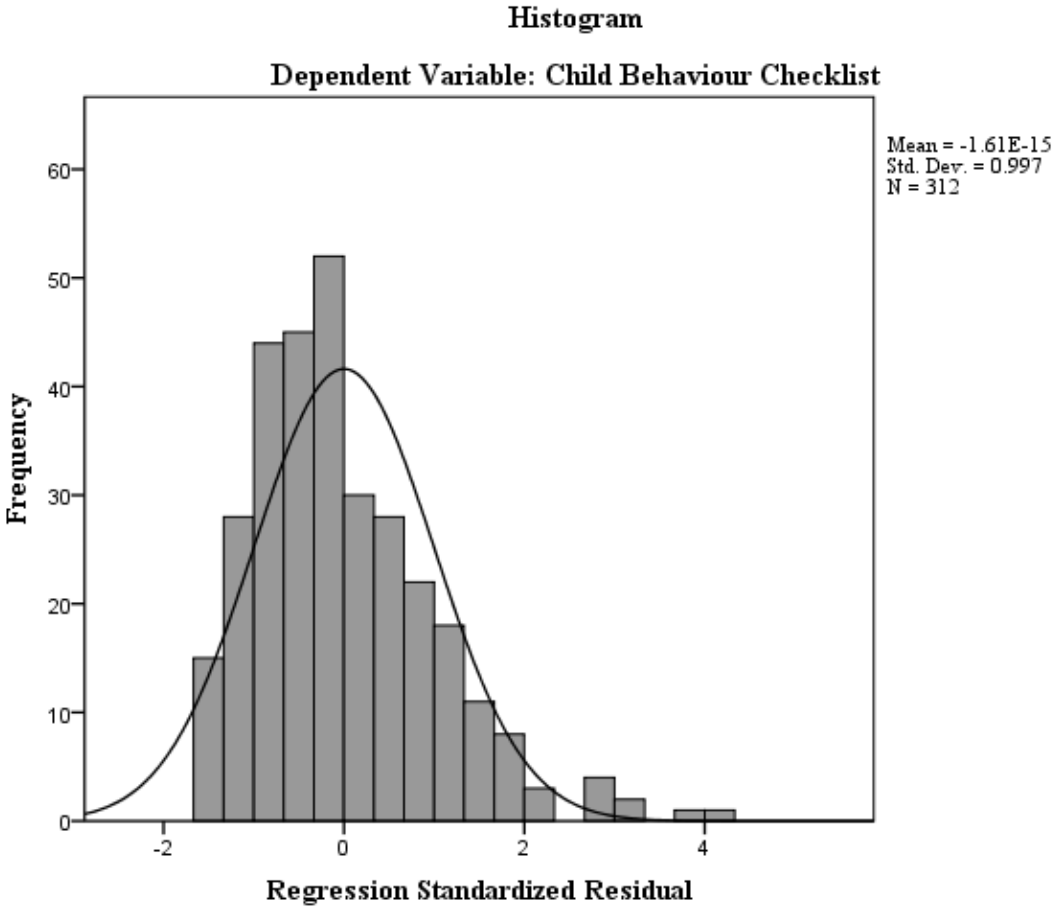
Histogram
Dependent Variable: Child Behaviour Checklist
Mean = -1.61E-15
Std. Dev. = 0.997
N = 312
Frequency
60
50
40
30
20
10
0
-2
0
2
4
Regression Standardized Residual

Figure 14.

Tolerance.

The tolerance values for both predictors were only marginally smaller than one (*Tolerance*=0.87).

Assumption of linearity and homoscedasticity.

Figures 15, 16 and 17 (below) represent the partial plots. In these partial plots it is evident that the data is roughly scattered, and that a straight line would be the most appropriate line to fit to this data. Additionally, there is a lack of any particular 'funnel' shape in the graphs, therefore, there is no evidence for heteroscedasticity.

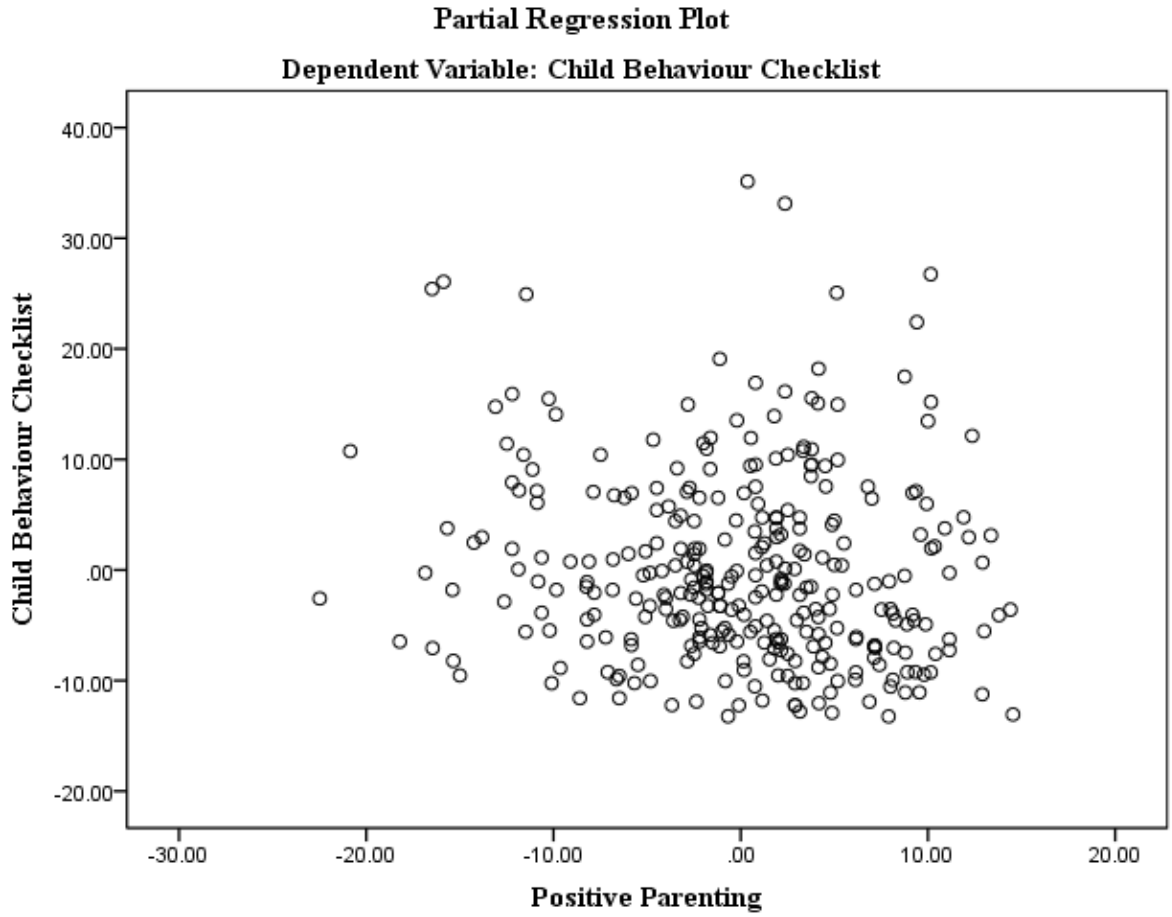
Partial Regression Plot
Dependent Variable: Child Behaviour Checklist
Child Behaviour Checklist
40.00
30.00
20.00
10.00
.00
-10.00
-20.00
-30.00
-20.00
-10.00
.00
10.00
20.00
Positive Parenting

Figure 15.

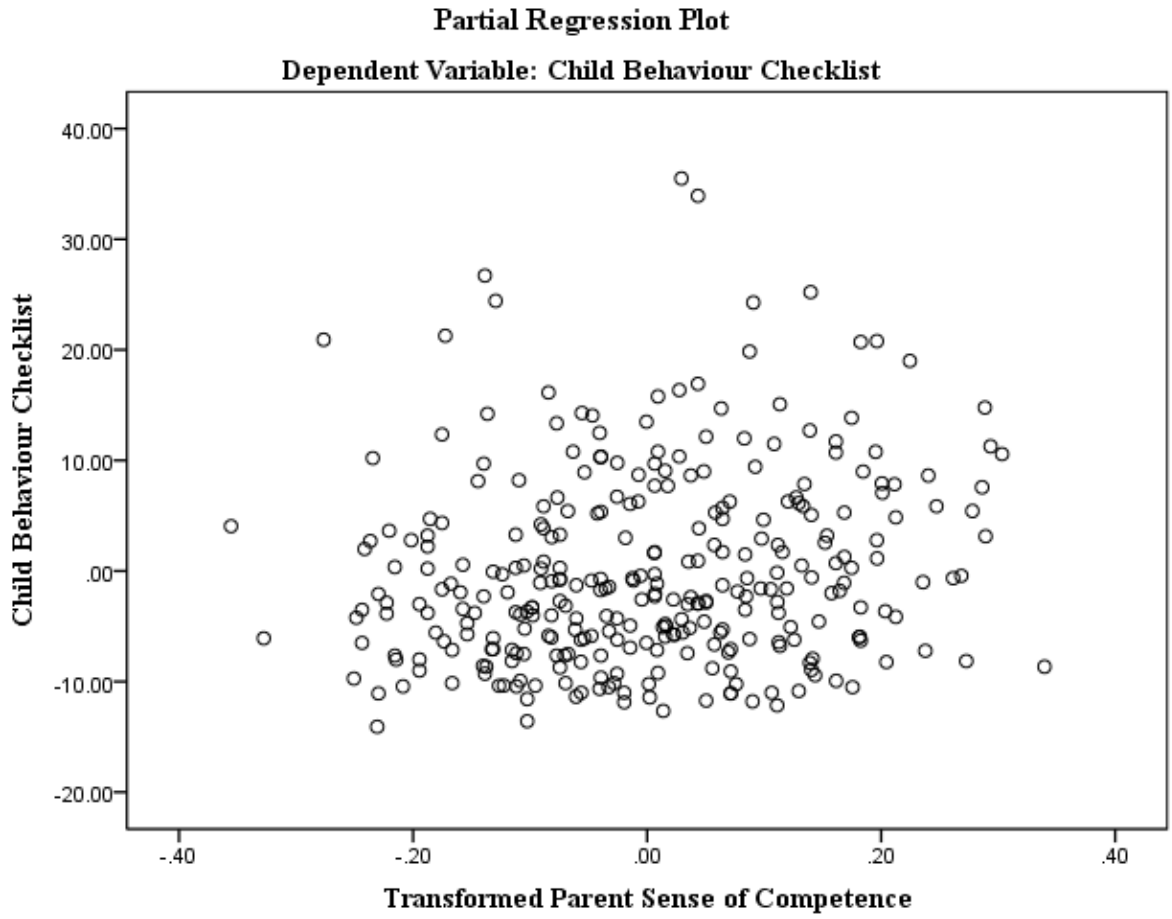
Partial Regression Plot
Dependent Variable: Child Behaviour Checklist
Child Behaviour Checklist
40.00
30.00
20.00
10.00
.00
-10.00
-20.00
-.40
-.20
.00
.20
.40
Transformed Parent Sense of Competence

Figure 16.

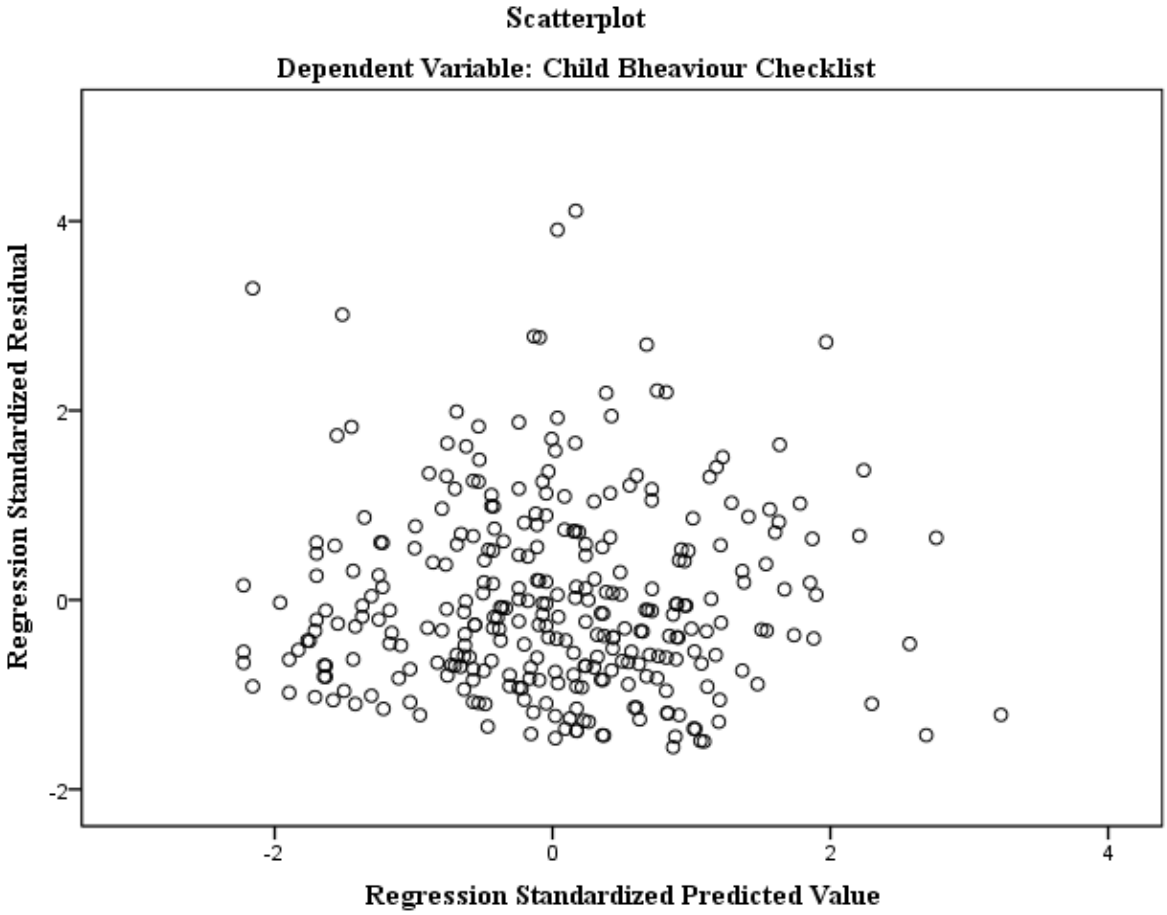
Scatterplot
Dependent Variable: Child Bheaviour Checklist
Regression Standardized Residual
Regression Standardized Predicted Value
4
2
0
-2
-2
0
2
4

Figure 17.

Appendix G

Variable Construction

Alabama parenting questionnaire.

Factor analysis.

In the larger study a factor analysis was conducted using the original APQ scale. Table 5 shows that the results from this study found that the most optimal factor structure was a five factor solution - of which only two factors had sufficient internal consistency to be useful. The two factors were (1) Positive Parenting which consisted of items: 1, 2, 5, 7, 9, 11, 13, 14, 15, 16, 18, 20, 23, 26, 40; (2) Inconsistent Discipline and Supervision which consisted of items: 10, 12, 17, 19, 21, 24, 31.

Mild and harsh corporal punishment.

From factor analysis no corporal punishment items appeared. Theoretically, this is a very important parenting behaviour risk factor for child aggression. Therefore, we decided to include corporal punishment in our regression analyses and chose to differentiate between mild and harsh corporal punishment. Mild corporal punishment consisted of the average of slapping and spanking (items 33 and 35 respectively). Harsh corporal punishment consisted of hitting your child with an object (item 38).

Table 5

Factor Structure of Alabama Parenting Questionnaire After Factor Analysis

Scale	Item Number	Individual Items	Item-Total Statistics		
			Cronbach's Alpha if Item Deleted	Cronbach's Alpha of Scale	No. of Items
1	1	You have friendly talk with your child	0,76	0,768	15
	2	Acknowledge child when does a good job	0,753		
	5	Rewarding good behaviour	0,756		
	7	Do fun things with child	0,753		
	9	Ask about child's day	0,752		
	11	Help child with homework	0,753		
	13	Compliment when child does something well	0,748		
	14	Ask about child's day plans	0,761		
	15	Take child to special activities	0,751		
	16	Praise for good behave	0,746		
	18	Hug/kiss child	0,751		
	20	Talk to child about friends	0,756		
	26	Attend parent-teacher meetings	0,754		
	40	Calmly explain when child misbehaves	0,763		
	23	Child helps with plan family activities	0,767		
2	10	Child stays out past curfew	0,666	0,712	7
	12	Difficult to get child to obey you	0,698		
	19	No curfew time	0,684		
	21	Out after dark with no supervision	0,633		
	24	So busy you forget what child is doing	0,692		
	17	Child out with friends you don't know	0,685		
	31	Parent's mood influences punishment	0,691		
3	3	Threaten to punish child then don't follow through	0,414	0,48	5
	6	Child leaves no note or fails to let you know where he/she is going	0,434		
	32	No supervision at home	0,414		
	39	Yell and scream at child	0,425		
	8	Child talks you out of punishing him/her	0,438		
4	28	Don't check when child is home	0,304	0,455	4
	29	Don't tell child where you are going	0,339		
	34	Ignore misbehaviour	0,446		
	25	No punishment	0,421		
5	36	Take away as privileges	0,213	0,451	3

41	Timeout as punishment	0,3
37	Send child to room as punishment	0,511

Economic hardship.

'Income sources' was removed from the variable of economic hardship because of the contradictory ways of interpreting the items. For example, parents who affirmed they had a number of income sources could be considered as more affluent than those who assented to having access to fewer. Yet, it was also possible to understand that parents who affirmed that they had access to the income sources we asked about were not necessarily very well off at all. Additionally, the hunger scale returned very low reliability (α= -0.09). This resulted in us deciding to also exclude this measure from the final measure of economic hardship as well. The final variable of economic hardship comprised of the compilation of items from the household inventory and employment status. The Household inventory was constructed so that the more household items participants stated they had the less economically deprived they were considered to be. 'Yes' was coded as 1, 'No' was coded as 0. Employment status consisted of an answer to the question "are you employed or not?" 'Yes' was coded as 1, 'No' was coded as 0. We also decided to exclude "part-time/fulltime" and "formal/informal" indicators as there were problems with these items in terms of how they were understood by participants. This was evident from the coding. For example parents would sometimes report that they were 'not working', yet would then report that they were working 'part time' and 'informally'. Economic hardship was the end variable and was constructed in such a way so that higher scores indicated that the participant was more economically advantaged.