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The Impact of Violence Against Children On Human Capital in South Africa

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THE IMPACT OF VIOLENCE AGAINST CHILDREN ON HUMAN CAPITAL IN SOUTH AFRICA

by

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GEORGIA STATE UNIVERSITY

A Thesis Submitted to the Graduate Faculty of Georgia State University in Partial Fulfilment of the Requirements for the Degree

MASTER OF PUBLIC HEALTH

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Author’s Statement

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Hope Ugboke
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ABSTRACT

In this study, extensive data from the Cape Area Panel Study (CAPS) conducted between 2004-2009 was used to investigate the impact of violence against children on human capital within South Africa, through its impact on education and health of victims of physical and emotional abuse. The results of this study revealed a significant negative relationship between physical and emotional violence against children and their health and education, such that victims of either physical or emotional violence experienced increasingly poorer health and education levels, which lingered from childhood into adulthood. These results contribute pertinent knowledge to the existing body of work on the prevalence and consequences of violence against children and indicate significant adverse implications for South Africa's human capital due to the relationship between the human capital value and societal development. Therefore, this study proposes capacity building and awareness strategies, which can mitigate violence against children and ensure the health and well being of children in the nation are protected.
1 INTRODUCTION

Violence against children is a human rights malfeasance where children are subjected to various forms of physical and psychological abuse in various environments such as their schools and homes (Pereznieto et al, 214). Inarguably, violence and abuse against children is a global issue with reports from studies by UNICEF (2015), showing that children across the globe are victims of abuse regardless of class, gender, age or education level. Evidently, violence against children is ubiquitous, occurring all over the world and cutting across all demographics of children, putting billions of children at risk. Reports from The Australian Domestic & Family Violence Clearinghouse (2011) shed more light on the magnitude of this issue as the report shows that over one million children are affected by domestic violence in Australia and over 1 billion children worldwide have experienced either emotional, sexual or physical violence. A study by UNICEF (2006) revealed that 275 million children worldwide had been victims of violence at home and in Bangladesh, child labour was rampant with an average of 58% of children between the ages of five and 17 (UCW, 2011). Furthermore, a national survey conducted in Tanzania in 2009 and published in 2011 revealed that, 75% of children in the nation were likely to have experienced physical violence prior to the age of 18 perpetrators by a relative or authority figure (UNICEF, 2011). In Cambodia, a 2014 survey conducted by organisation, which included UNICEF, and the country's Ministry of Women affairs revealed 52% of females and 54% of males experienced physical abuse before the age of 18 and both females and males were subjected to emotional abuse before the age of 18. In Nigeria, a survey conducted in 2014 revealed that 25% of females and 11% experienced sexual violence, 50% of females and 52% of males experienced physical violence. Furthermore, UNICEF (2016) reports that one in six children in Nigeria are victims of at least one form of abuse and violence against children is estimated to be incurring global costs of $97 billion per year (Pereznieto et al, 2014). These countries serve as a metaphorical placard of the prevalence of violence against children across the globe and these statistics paint a harrowing yet acute picture of the magnitude of
this problem whose prevalence and resulting negative impact has been the focus of human rights campaigns, policies and academic studies aimed at either understanding, preventing, curbing and eliminating violence against children. Nonetheless, this does not indicate a solely contemporary manifestation or acknowledgement of the occurrence of violence against children as Bensel et al (1997) as well as the United Nation's Secretary-General (2006) have all cited cases of physical and sexual abuse against children as well as infanticide which date back to ancient civilisations. However, it does indicate a continued and concerted effort to address a problem with UNICEF and the World Health Organisation have jointly described as a global public health pandemic.

In South Africa, which is the focus of this study, similar trends have also been reported with the works of Fang et al (2016) and CAPS (2016) providing reference to the prevalence of child abuse in the country. In the study conducted by Fang et al (2016), the researchers focused on investigating the prevalence and impact of four types of violence against children, namely: Physical violence, Sexual violence, Emotional Violence and Neglect in South Africa and in addition revealing that these acts of violence were also existent in South Africa, "7.2% for contact sexual violence (6.1% for males and 8.5% for females), 26.1% for physical violence (24.0% for males and 28.7% for females), 12.6% for emotional violence (9.7% for males and 16.2% for females), and 12.2% (9.8% for males and 15.1% for females) for neglect", the study also revealed acts of violence resulted in psychological and health problems for children with cases of increased susceptibility to sexually transmitted diseases, lower levels of educational achievement, physical and mental disability to mention a few. Furthermore, the research also cite data from the CAPS which shows that physical violence and emotional violence against children resulted in 11.7% (ZAR382) and 9.2% (ZAR300) reduction in victim's monthly earnings respectively. Additionally, a study conducted by Mills et al (2011) into the impact of child abuse and neglect on cognitive function in 14-year-old children revealed that victims of childhood violence exhibited decreased cognitive function, poorer literacy skills and ultimately poor
academic performance from childhood to adolescence. Theoretically, these impacts could directly or indirectly impact the human capital of South Africa

1.1 THE IMPORTANCE OF HUMAN CAPITAL IN A NATION

The relevance of understanding the impact of violence against children on the human capital of South Africa is premised on the importance of human capital within a country. According to Schutt (2003), human capital plays a significant role in the economic growth of individuals, organisations and countries. This role is leveraged on the capabilities of an individual and the positive contributions the individual can offer within his or her environment. Furthermore, researchers such as Barro (1991) and Mankiw et al (1991) argue that reduced human capital can lead to reduced economic growth despite contrary arguments from Benhabib and Spiegel (1994) and Pritchett (2001) who assert that there is no relationship between the human capital and economic growth. Nonetheless, considering the focus of this study on violence against children and its impact on human capital consider the following assertions, the overall development of children (physical, emotional and social) from childhood through to adulthood plays a significant role in their ability to contribute positively within their environment, be it within the home, school, workplace and the world as a whole (Dodge, 2007). Considering that human capital, as described by Pettinger (2017), is the evaluation of an individual's skills, and expertise and their level of productivity, it is theorised that the capabilities of an individual are influenced by their development through childhood and the specific factors, which influence their development. Therefore, it can also be argued that when considering violence against children, victims who experience abuse in childhood are susceptible to reduced human capital evaluations. This is further emphasised by UNICEF (2015) who cite Fang et al, (2015), all concurring to the adverse effects of violence against children on human capital, particularly with respect to health and education.
These studies represent a first foray into understanding the trends in South Africa with results showing significant adverse economic, health and educational effects. However the impact of this abuse on human capital, which is also a valuable consideration, is yet to be fully studied and understood providing a worthwhile premise for the significance of this study as well as the aims and objectives

1.2 PURPOSE OF STUDY

As important as it is to outline the global occurrence of violence against children, particularly through empirical evidence presented by the reports highlighted hitherto, it is also necessary to note that violence against children results in both short and long term impacts on the human capital of child and the child's contribution to his or her environment. Understanding this aspect of the subject will provide a comprehensive backdrop to fully identifying the impact of violence against children in South Africa. Consequently, this study will provide in-depth insight into the child abuse trends within South Africa, the impact of the abuse on human capital, the consequences, if any, of this impact on South Africa as a nation, and provide a premise for decision-makers to address the problem

1.3 AIMS AND OBJECTIVES

In light of the purpose of this study, this study aims to estimate the impact of violence against children on the human capital of South Africa, particularly focusing on health and education. Evidently, violence against children has already been reported to result in adverse health impacts on victims with cases of physical injury and psychological debilitations linked to abuse. However, the long-term effect this will have on the human capital is yet to be fully studied. Arguably, if victims of child abuse are susceptible to academic and health debilitations, it is probable that their capacity as human capital is also diminished. Consequently, it is this probability that this study

aims to evaluate. To do this, this study uses existing literature to provide a theoretical baseline and existing empirical evidence to validate suppositions made in this study. The data and results of this study will provide significant insight into the cross-sectorial impact of violence against children in the nation and also suggest policies and frameworks for addressing this issue within South Africa. The specific objectives of this study, which will collectively contribute to the meeting, the aims stated hitherto are:

- To evaluate the impact of violence against children on human capital with specific focus on education
- To evaluate the impact of violence against children on human capital with specific focus on health
- To provide worthwhile actionable suggestions on strategies to address violence against children within South Africa.

In conclusion, this chapter was aimed at providing an introductory prose to the issue of violence against children and the significance of this study's focus on its impact on human capital. Subsequently, chapters hereafter are divided thus:

Chapter 2 will contain a literature review, which will detail relevant academic and non-academic theories and studies focusing on violence against children, its various forms and impacts. Chapter 3 will detail the chosen methodology for this study, how data was gathered, analysed and presented. Chapter 4 will contain the results from the application of the outline methodology in Chapter 3. Finally, Chapter 5 will contain discussions on the results achieved in the as well as suggestions on actions, which can be taken based on these results.
In order to understand the violence against children, it is necessary to provide an exposition on the concept of "violence" against children and its various forms as well as its antecedents and consequences. Consequently, the discussion in this chapter will provide a theoretical backdrop for the theorised link between human capital and violence against children and provide insight for formulating actionable strategies to curb, prevent and eliminate the threat of violence against children.

2.1 THE NATURE OF VIOLENCE AGAINST CHILDREN

The nature of violence against children can be understood through the conceptualisation of "violence". According to Olweus (1999), violence is any aggressive act where perpetrators use their bodies or objects to cause harm to another individual. This definition describes violence as an intentional physical act and despite the definition holding merit, it overlooks the fact that the scope of acts of violence extend beyond physical and intentional acts of harm to psychological and unintentional acts as well. The definition provided in formative work by Ritchie and Ritchie (1981) provides foundational yet broad supposition for this notion by describing violence as any act, which causes harm to another individual. Consequently, subsequent considerations into the broader scope of violent acts led to more encompassing redefinitions such as Ritchie and Ritchie (1990) defining violence as any conscious, unconscious, intended, unintended, physical or psychological threat or assault which causes another individual harm. This definition takes a more holistic perspective on violence as it connotes both tangible and intangible acts, which harm an individual. This is further highlighted in The New Zealand Domestic Violence Act's (1995), which explicitly defines violence as any physical, emotional or sexual abuse towards another individual. This definition simultaneously dovetails into conceptualisation of the violence against children as well as the various forms of violence. A world report documented by Pinheiro (2006) for the United Nations, as well as a publication by UNICEF (2014) defined violence against as “all forms of
physical or mental violence, injury and abuse, neglect or children negligent treatment, maltreatment or exploitation, including sexual abuse.” The World Health Organisation (1999) also defines it as "all forms of physical and/or emotional ill-treatment, sexual abuse, neglect, negligent treatment, commercial or other exploitation, resulting in actual or potential harm to the child’s health, survival or development or dignity in the context of a relationship or responsibility, trust or power”. Furthermore, definitions from The Brazilian Ministry of Health (2014) as cited by Lowenthal (2001), can be surmised to describe violence against children as any physical or mental injury, sexual abuse, negligent treatment or maltreatment of a child under the age of 18 by a person who is responsible for the well-being, resulting in adverse impacts on the health and well-being of the child. From these definitions, it is deduced that violence against children can be succinctly described as physical or psychological acts of harm and maltreatment directed at children and jeopardising the well being of the child. Furthermore, these definitions also indicate that violence against children manifests in acts of both commission and omission and results in both short-term and long-term physical and psychological consequences for victims. Consequently, these organisations agreeably consider violence against children to take two distinct forms: physical and emotional violence, all of which have been highlighted in Chapter 1 and will be discussed hereafter.

2.1.1 Physical violence

Physical violence against children is seen as any actual or probable physical harm suffered by a child due to an action, or inaction of a parent or person of authority (UNICEF, 2014). Sattler (1998) goes further to outline specific acts, which constitute acts of physical violence against children such as punching, beating, kicking, biting and shaking a child. Despite these stipulations connoting physical violence against children as a tangible and intentional act of harm, physical violence can also be unintentional and psychological (UNICEF, 2014). In reports published by the Police in South Africa, it was revealed that out of the 50688 children who had been victims
of abuse, 12,645 were victims of assault, 10,630 were victims of grievous bodily harm, 793 were murder and 758 were victims of attempted murder. In later chapters of this study, strategies for addressing violence against children, including physical violence, will be discussed and prior to this discourse, it is necessary to note that despite data and reports providing some perspective on the incidence of physical violence against children within South Africa and other nations, the magnitude of this problem cannot be precisely quantified due to lack of extensive data as a result of multiple unreported cases of violence against children. This is a particularly significant challenge with identifying and addressing physical violence against children because the children are occasionally unable to report incidents for reasons such as being afraid of the perpetrators of physical violence or being physically or psychologically incapable of reporting. However, cases of physical violence do not go entirely undetected as instances of this abuse tend to leave signs on the victims such as bruises, scars, welts, cuts, fractures, burns and scalds. Consequently, this provides useful circumstances because where children are unable to make reports on physical abuse; such signs serve as indications to concerned individual and authorities that a child is probably a victim of physical abuse. Still, not all forms of violence leave such visible indications, emotional violence, as well as neglect tend to be incorporeal and leave psychological indications, which are not easily identified.

2.1.2 Emotional Violence

Emotional violence is defined as any act or omission such as, but not limited to, rejection, isolation, inappropriate or continued criticism, threats, exposure to family violence, corruption of the child due to exposure or involvement in illegal or antisocial activities and the negative impact of substance abuse within the proximity of the child, resulting in impaired psychological, social intellectual and/or emotional functioning and development of a child (Simcock, 2000) The Wisconsin Child Welfare Mandated report defines it as emotional damage inflicted on a child for which a parent or individual with custodial authority over the child refused or is
unable to alleviate. Garbarino and Garbarino (1994) as well as Korfmacher (1998) also define emotional violence as any maltreatment through actions; such as rejection, belittling, criticism and insult; or nonchalance, such as neglect or ignorance, that retards the psychological growth and development of a child.

Emotional abuse, much like sexual violence, is another form of violence against children whose occurrence and consequence are more incorporeal than corporeal. Accordingly, researchers such as Lowenthal (2001) prefer to describe emotional violence as psychological abuse because of the behavioural and cognitive impacts it has on the victim. In comparison to physical, it is can be supposed that emotional violence forms some component of the consequences of all forms of abuse. As discussed in sections hereafter, sexual and physical abuse results in either short-term or long-term behavioural and cognitive consequences for the victims, which is also a by-product of emotional abuse. This indicates that all though all forms of abuse may not leave physical indications on the victim, the psychological impact is ever-present. Consequently, acts of emotional violence are far more intrusive than any other form of abuse.

A significant factor, which has motivated further discourse into emotional violence, is the unintentional versus intentional emotional abuse. Literature from Li et al (1990) and Stevenson (1996) suggest that though physical and sexual abuse are usually committed with intent, emotional violence is usually committed unknowingly and without premeditated intent to cause harm. This argument is one shared by several erstwhile researchers as Navarre (1987) and Covitz (1986) who individually argued the notion that, though emotional violence against children results in psychological abuse and consequences, the intent of the perpetrator was not to emotionally abuse the child, and in most cases, the perpetrator is unaware of the emotional abusive actions either through ignorance or a lack of skills and knowledge in addressing the health and well-being needs of a child. However, counter-arguments can be seen in the works of Garbarino (1978) and Gil (1971) who all concur that emotional abuse is
always intentional and aimed to cause the child harm. By reviewing these erstwhile arguments, this study leans in favour of assertions made by Montgomery (1989) who argues that regardless of the intentional or unintentionally premises behind emotional violence against children, parents and individuals with custodial authority over children must be culpable for every act of emotional abuse inflicted on a child.

In light of the discussed forms and characterisation and prevalence of physical, and emotional abuse, it is pertinent to understand the various consequences of violence against children. By doing so, a clear overview of the short and long term impact of various forms of abuse, aid in developing policies and strategies which can mitigate these antecedents and curb, prevent or eliminate acts of violence against children

2.2 CONSEQUENCES OF VIOLENCE AGAINST CHILDREN

As discussed in Chapter 1, the human capital of a nation represents an important asset for economic growth and development as nation's can leverage on the skills, capabilities and expertise of its people to achieve national goals (Schultz 1961; Nelson and Phelps 1966; Romer 1986). Consequently researchers such as Finkelhor at al, (2005) have surmised that the quality of human capital in an organisation or nation is directly proportional to the level of economic growth and development the country is capable of achieving. However, considering the prevalence of child abuse in its many forms across the globe, the quality of human capital available is jeopardised as violence against children inflicts wide-ranging adverse effects on children who suffer short-term effects in their childhood and long-term effects in their adulthood (Garbarino, 1992, 2001; Groves, 1997, 2002, Morgan & Zedner 1992, Wolfe et al, 2003). The crux of this study rests on identifying the impact of violence against children on human capital in South Africa with particular focus on health and education. Consequently, this section will discuss the impact of violence against
children on education and health, in relation to the short-term, long-term, direct or indirect impact it will have on human capital.

### 2.2.1 The Impact of Violence on Health

Studies have shown that violence against children results in adverse physical, emotional, behavioural, cognitive and social effects on the victims (Jaffe et al, 2005; Perry, 2004; Finkelhor et al, 2005; Garbarino, 1992, 2001; Groves, 1997, 2002, Morgan & Zedner 1992, Wolfe et al, 2003), all of which jeopardise the health of the victims. In terms of physical violence, Finkelhor and Dziuba-Leatherman (1994) and Morgan and Zedner (1992) concur that physical injuries sustained from abuse are the most obvious signs of child abuse and in addition to short-term consequences such as bruises, scars, burns and dislocation, long-term consequences such as poor health, recurrent illness, permanent scarring, speech delay disabilities and body deformations are also possible. Furthermore, Bicakci (2016) notes that in more severe cases, physical violence has resulted in loss of memory, permanent brain damage, suicidal tendencies and premature death of victims. (Yegidis, 1992, Morgan and Zedner 1992, Walker 1993. The negative impact of emotional violence and neglect has also been reported to result in debilitating long-term consequences such as self-inflicted harm, hyper sexuality, aggressive or assaultive behaviours, impulsivity, low self-esteem, impaired cognitive capacity, emotional upset, fear and post traumatic stress disorder (Osofsky, 1999; Garbarino et al, 1992; Terr 1991). Consider the Figure 2 which depicts the proportion of mental disorders in East Asia and the Pacific as reported by UNICEF (2015)
Figure 1 shows that 25% of mental disorders amongst low income males were due to physical abuse during childhood, 30% of mental disorders lower-middle income females were due to sexual abuse, 15% of mental disorders in upper-middle males and females were due to neglect and 40% of mental disorders upper-middle males as well as 19% of high income females were due to emotional abuse. All experienced in childhood. Furthermore, Gilbert at al, (2009) reports that 25% of abused children exhibit depression in their late 20s and in the United States, 80% of abused children young adults who suffered child abuse experienced one of more forms of psychiatric disorders at the age of 21.

The impact of violence on the health of victims is further evidence in a retrospective study by Schafer et al (2014) who used data from a Midlife Development in the United Stated (MIDUS) study conducted in 1995, to assess the impact of violence on the health of 25-74 year olds in 48 states in the United States. In addition to results showing that childhood maltreatment does not always result in poor relationship with family members, results from this study coincide with assertions form Finkelhor et al, (2005) and Wolfe et al, (2003) by showing that physical and emotional abuse resulted
in negative impact on the long-term health of victims which include chronic conditions, acute physical conditions and poor well-being in general. Furthermore, the results showed that some victims of child abuse still report positive relationships with parents based on the perception that the abuse was justified as an appropriate form of chastisement. Negative health impacts were worsened in victims who exhibited negative relationship with parents and the authors argue that these results connote family relationship as a determinant of the severity of health consequences from abuse and victims who experience abuse while in poor family relationship tend to experience strained or estranged relationships with these family members which further increases mental stress on the victim, resulting in health complications later on in life.

Schafer et al's (2014) study provides an exposition focused on the physical impacts of abuse on victim's health and in comparison to this study Springer et al (2007) provide further details in their study of long-term physical and mental consequences of childhood physical abuse on over 2000 middle-aged men and women in the United States. The study used data from the Wisconsin Longitudinal Study (WLS), which is a longitudinal study of men and women who graduated from Wisconsin high schools in 1957 as well as their siblings. The results from this study showed that in comparison to individuals who did not experience physical abuse, victims of childhood physical abuse reported worse mental and physical health than 90% of their counterparts. Furthermore, the results also concur with outcomes of previous studies (Bicakci, 2016; Yegidis, 1992, Morgan and Zedner 1992, Walker 1993) by showing that health impacts of physical abuse manifested in various physical and mental illnesses such as physical illness, depression, anger, anxiety and these illnesses occurred as far as 40 years after the abuse was experienced. Particularly, Springer et al's (2007), Shaw and Krause (2002) and Goodwin et al (2003) collectively reported that instances of heart disease, ulcers and other stomach illnesses. With consequences such as permanent physical disability and mental disorders being cited as outcomes from all forms of violence against children, it is evident that violence against children diminishes the
physical and psychology state and well-being of children, resulting in children, who ultimately grow into adults with physical and mental health issues. Consequently, this bears significant impedance to the health of a country's population as and decreases the value of human capital. Researchers such as also Bloom and Canning, (2000) concur stating that in addition to antecedents such as education, health bears a significant consequence on human capital and reduced health and quality of life connotes reduced life expectancy which adversely impacts human capital (Slaus & Jacobs, 2011; Soares, 2005; Kalemli-Ozcan, 2002).

The premise for these assertions, as argued by Bloom and Canning (2000), Grossman (1972), Schultz (1992), is that health a direct determinant of human well-being and dictates the degree of productivity, as well as contribution to work and society, an individual can offer within his or her environment. Furthermore, optimal health in a nation can be characterised by high life expectancy, low child and mortality rates (Barro 1991; 1997). Moreover, the high standards of health have also been linked to improved productivity of the labour force, and as shown in Figure 3, child health has been identified as direct determinant of the health of adult workers who constituentv said labour force, and an indirect determinant of labour productivity and human capital.
Palpably, an increase or decrease in the health of children will significantly impact the human capital accordingly and this further emphasises the impact of violence against children on the human capital of a nation as theoretical assertions highlighted hitherto have already exposed the multi-layered debilitating impact any form of abuse has on the health of children. Despite a lack of extensive empirical studies to provide statistical justification for the theoretical link between health and human capital, these assertions provide sufficient premise for this study's focus on evaluation this link with empirical data gathered from the CAPS (2016) study in South Africa.

2.2.2 The Impact of Violence on Education

The role of education in human capital has been extensively researched and theorised across several decades of research (Schultz, 1967; Mincer, 1974; Schultz, 1993; Becker, 1993, Crocker 2006) and the backdrop of these studies is the human capital theory, whose origins were traced by Sweetland (1996) to erstwhile research by Adam Smith and John Stuart Mill in the 18th and 19th century respectively. The theory holds that the well-being, growth and development of any society is a function
antecedents such as financial, labour and natural resources as well as the human capital of the environment, through the skills and capabilities of the individuals who constitute said human capital. Consequently, an increase in the quality of human capital advertently leads to an increase in well being of the society. In light of this, education has been postulated to play a key role in developing this human capital as it considered a primary channel through which individuals gain knowledge skills and hone capabilities to contribute positively to the value of human capital (Crocker, 2006). The World Bank (1999) specifically states that education births innovation through a deeper understanding of oneself, capabilities, the challenges in the world and possible solutions. It provides individuals with the audacity for creativity and innovativeness, which determines technology advancement in a society. Consider the growth and development of China as an illustration as the nation's reforms to accumulate human capital, through investment in education, resulted in an increase in growth from 3.9% in 1979 to 9.5% in 2010 (World Bank 2011). Furthermore, the country's per capital income doubled between 1978 and 1987 as well as between 1987 and 1996 (World Bank 1997). Based on these assertions, education, through innovation, can be said to improve the quality of human capital and thus stimulate economic growth and development. Despite counter arguments from researcher such as Thomas and Wang (1996), who cite the peculiar case of Sri Lanka as an illustration of the ineffectual impact of education on human capital and national development, the prodigious evidence indicates that education plays a key role in human capital through a directly proportional relationship.

Considering the significant positive impact education has on human capital, it is deducible that factors, which hinder the academic lifecycle of individuals, will indirectly devalue the human capital of a society. With this in mind, consider some of the following impacts violence on children going to school. Studies by Kaplan et al (1999) and Gokler (2002) report that children who suffered one or more forms of abuse experience reduced cognitive skills and decreased ability to succeed in academic environments. Furthermore, children who suffered abuse and neglect
achieved lower scores in tests of reading, mathematics language development and
cognitive capacity in comparison to children who had not been victims of such abuse
(Lownethanl 2001; Perry 2004; 2005). In contrary, Shepherd (1996) argues that in
some cases, children who suffer abuse tend to excel in academics as a result of an
innate need to please the perpetrator of the abuse. However, further evidence of
violence against children's impact on education can be found in works of Perry (2004;
abuse experience difficulty in concentrating on academic activities, gaining new
knowledge, acquiring new developmental skills and find it difficult socialising within
environments such as schools, resulting in disrupted academic development.
Moreover, Shepherd (1996) argues that the poor academic levels of abused children
can be attributed to the children constantly delegating time and energy towards
mentally or physically avoiding or abuse, thus leaving them with miniscule amount of
physical or intellectual energy to delegate to academic responsibilities. To provide
further perspective on these assertions abused children have also been to perform
lower on psychometric tests of cognitive ability, increased rate of absenteeism in
school, grade retention, increased need for remedial lessons in abused children and
increase rate of school dropouts, academic achievement and memory assessments in
comparison to non-abused counterparts (Wells et al, 1997; Reyome, 1994; Daignault
& Herbery, 2009; Rice & Miller, 1996; Briere & Elliott, 2003).

The asserted relationship between violence against children and health is further
evidence in a study by Contreras et al's (2016) who investigated the impact of
bullying on school performance amongst 8th grade students in Chile. Results from
this study showed that being a either a bully or a bully-victim resulted in reduced
school performance, aligning with results from other studies such as (Wolke et al.,
2001; Glew et al., 2005; Nakamoto and Schwartz, 2010). Interestingly, the results also
revealed that decreased school performance was only a consequence of bullying when
the victim was a student of average academic performance and bullying actually
resulted in improved academic performance for students with high academic
performance. This concurs with assertions from Shepherd (1996) who suggested that abuse resulted in improved academic performance because victims increased efforts to excel academically either to please perpetrators, who are predominately parents or individuals with custodial authority, or as an avenue to escape the acts of abuse and find solace.

In a study by Huang and Mossige (2012) into the impact of non-physical, physical and sexual violence on the academic achievement of 6979 18 and 19 year old students, who experienced violence before the age of 13, in Norwegian secondary schools. The research model in this study constituted a multi-layered relationship between the psychological health, social capital, home background of children, their personal characteristics and instances of childhood abuse hypothesised an impact of all these factors on the child's performance in school. Results from this study showed that in addition to violence against children being prevalent amongst families with low socio-economic status, which concurs with assertions made by several studies (Blaiklock et al, 2002; UNICEF, 2003; Slee, 2003) highlighted in Chapter 2, violence from peers and sexual violence exhibited a strong negative impact on academic performance and violence from parents and sexual abuse also exhibited a debilitating impact on the academic performance of victims as well as their psychological health. Further studies have also produced similar results to studies in Chile and Norway as Tanaka et al (2014) investigated the impact of physical and sexual abuse on the educational attainment of 1893 young adults, aged 4-16, in Ontario, Canada. Noteworthy results from this study was that physical abuse was related to academic failure, poorer academic evaluations from parents and teachers, increased failure to complete schooling and failure to graduate high school later on in the lives of the students. However, sexual violence did not exhibit any significant impact on academic performance and despite concurring with assertions from Eckenrode et al., (1993) and Perez and Widom (1994). Tanaka et al (2014) attempt to explain the varying impacts of physical violence and sexual violence on children by citing Gilbert et al., (2009) who stated that physical violence as well as neglect, were forms of abuse
predominately perpetrated by parents or individuals with custodial authority over children and victims of these forms of abuse may experienced by psychological trauma due to the nature of the perpetrator than those who are abused sexually, which can be perpetrated by peers or even strangers, thus resulting in lesser impact on the academic life of the students who experienced physical abuse. However, this contradicts assertions from Shepherd (1996) as, according to this study, rather than victims experiencing improved academic performance due to experiencing violence from parents or individuals with custodial authority, the reverse was the case.

Nonetheless, considering the affirmations that education plays in a key role in developing human capital, as well as the adverse impact violence against children has on education of the victims outlined in the studies hitherto, this study theorises that lower levels academic achievement result in decreased human capital as the quality of workforce is diminished through lack of education. Notionally, acts of violence against children have an indirect negative impact on the human capital of a nation, South Africa in this case, through negative impact on education. This provides further premise for this studies aims and objectives.

2.3 SUMMARY

In this chapter, the research discussed the nature of violence through an elucidation on the forms of violence against children, the cases of violence against children and the consequences of such actions of child abuse. The reviewed literature provided perspective on the physical and psychological abuse suffered by children; with consequences such as bruises, scars, disabilities, death, depression and low self-esteem. Reviewed literature empathically postulates negative impact of violence against children on the health and education of the victims, resulting in abused children who grow up to become academically and physiological disadvantage members of the nation's labour force, contributing to the devaluation of the nation's human capital and decreased potential for growth and development. Evidently,
violence against children is a problem with global prevalence and society's which inadvertently or advertently feature any or all forms of child abuse consequently jeopardised their own growth and development through sabotaged human capital. Therefore, this study's focus on the impact of violence against children on South Africa's human capital as significant and pertinent as previously reviewed reports suggest a prevalence of violence against children within the society. In the chapter hereafter, the chosen methodology for this study will be discussed.
3 METHODOLOGY

In the preceding chapter, the theoretical basis for this study was presented with specific emphasis on the impact of various forms of violence on human capital through education and health. Therefore, the theoretical assumptions made within the literature review as well as the aims and objectives of this study require an empirical assessment to either validate or rebuff the assertions stated therein with regards to the health, well-being and human capital within South Africa. Consequently, this chapter presents the chosen methods of statistical evaluation employed in this study.

3.1 THE CAPE AREA PANEL STUDY 2004-2009

To address the aims and objectives of this study, a secondary data analysis was conducted on data from the CAPE AREA PANEL STUDY (CAPS) 2004-2009, as this study is considered to be significant source of extensive data on young adults in South Africa and has been widely used in recent years to examine the issues related to youth education and health (Ardington et al., 2009; LamLeibbrandt & Mlatsheni, 2007; Oyedokun, 2014; Ward & Viner, 2016)

The Cape Area Panel Study (CAPS) is a longitudinal study conducted by the Population Studies Centre in the for Social Research at the University of Michigan, the Centre for Social Science Research at the University of Cape Town, Southern African Labour and Development Research Unit as well as the Research Program in Development Studies at Princeton University. The project was primarily funded by the National Institute of Child Health and Human Development of the U.S. National Institutes of Health (NIH). Additional funding has been provided by the Office of AIDS Research, the Fogarty International Center, and the National Institute of Aging of NIH, and by grants from the Andrew W. Mellon Foundation to the University of Michigan and the University of Cape Town.
The objectives of these studies were manifold and focused on key phases in the lives of children in South Africa:

- The study aimed to provide extensive detail on the growth and development of children from adolescence through schooling, sexual maturity and activity, employment and starting a family
- To understand the prevailing circumstance surrounding children in post-apartheid South Africa, such as poverty, inequality, unemployment, prevalence of HIV/AIDS and abuse.
- To study the various levels of inequality which may still exist in South Africa, particularly socio-economic inequality and the factors contributing
- To serve as an extensive source of data on South Africa
- To identify correlations between education and outcomes in the lives of adults, such as what kinds of factors made it more likely that an adolescent, with any given education, would secure employment, and especially secure and well-paid employment?

3.2 RESEARCH DESIGN

The CAPS study focused on the lives of youth and young adults in metropolitan South African and spans 4 waves with studies conducted every year from 2002 to 2006 and publication of reports of these studies from 2004 to 2009 respectively. As result of the chosen demographic, the age bracket of respondents was between 14-22 years old and these respondents were chosen because the researchers viewed the age-bracket as narrow enough to ensure that reasonably large samples would be available at each age, as well as broad enough to cover a wide range of transitions. The respondents where interviewed in the first wave of the CAP study in 2002 and subsequently interviewed in succeeding studies in from 2003-2006. Consequently, these studies were able to evacuate the lives of respondents across multiple years and assessing the growth and development of respondents across various facets and phases of their lives including education, employment, unemployment and job search
as well as sexual, psychological and physiological health. The study also included samples of respondents within the households of the 14-22 year olds as well as random samples of respondents who did not have 14-22 year olds in their households.

3.3 DATA GATHERING

Bearing in mind this study's secondary analysis of primary data from the CAPS, the sample group and research design from the CAPS will also serve for this secondary study. In total, 5250 households and 4750 youth and young adults were interviewed and data was gathered using the following methods:

- Wave 1 in 2002 utilised questionnaires aimed at young adults and households as well as literacy and numeracy level evaluations
- Wave 2 in 2003/2004 utilised questionnaires as well as involved re-interviewing respondents from wave to update their data, particularly with respect to areas of education and sexual health
- Wave 3 in 2005 utilised questionnaires as well as involved re-interviewing all 4750 young adult respondents from Wave 1 as well as administration of questions to the parents or individual with custodial authority over the young adult, where possible. The primary goal was to update data on respondents particularly in reference to education, childbirth, sexual partners, parents and health
- Wave 4 in 2006-2007 also involved a young adult and household questionnaire and gathered data from all young adult respondents in wave 1, the biological children of all female respondents in wave 1 and the original household members in wave 1 who were 50 or over in 2006.

3.4 SAMPLE DESIGN

Regarding the sampling design, the strategy for the CAPS was to achieve a sample size of 4500-5000 young adults as well as achieve a sample group, which was a comprehensive representation of young adults, households with young adults and
households without young adults in metropolitan Cape Town. Consequently, the following were the key points noted in the final sample design for the study:

- "The sample was stratified on the predominant population group of the census enumeration area, with strata for the three major population groups in Cape Town – African, coloured, and white.
- EAs with fewer than 25 households were combined with nearby EAs to produce primary sampling units with at least 25 households.
- A sample of PSUs was selected within each stratum with probability proportional to size. The probability of selection was roughly twice as high in African and white areas as in coloured areas. This was based on a target of producing roughly equal numbers of African and coloured young adults, and about half as many white young adult respondents.
- Within each PSU a sample of 25 screener households was drawn using aerial photographs combined with on-site inspection and updating.
- Secondary households such as backyard shacks on the same property as screened households were added to the screened sample and treated in the same way as all other screened households.
- All screened households with members aged 14-22 were selected into the final sample of interviewed households.
- Households without any members aged 14-22 were selected into the final sample with probability around 0.5 in African and coloured areas and with probability around 0.3 in white areas.
- Up to three young adults were selected for the young adult sample from each household. In cases where there were more than three young adults, the three with the most recent birthdays were selected."
3.5 SECONDARY DATA PREPARATION

The CAPS 2002-2006 study provides an extensive in-depth perspective on the lives of young adults in South Africa and provides an opportunity for this study to utilise the extensive data from this study to conduct a further evaluation of the impact of violence against children on human capital, through health and education. Consequently, the following data will be extracted from the CAPS study and utilised in the statistical analysis of this study:

3.5.1 Data

This study uses the indicators of violence against children in wave 1, which young people (aged 14 to 22) were asked to retrospect their experience of childhood abuse. The indicators of health outcomes are come from wave 5, when the age of young adults were 21-29. The indicators of educational outcomes are come from both wave 1 (several test scores) and wave 5 (education level). The wave 1 of CAPS successfully interviewed 4752 youth or young adults and wave 5 successfully face-to-face re-interviewed 2915 respondents (Lam et al., 2012). Because of missing data in wave 5, the final sample size in this study will be a little smaller than the re-interviewed sample. Bi-variate analyses across gender, age, race and marital status were conducted to examine the difference between excluded missing cases in wave 5 and non-missing cases and no significant difference was found.

3.6 VARIABLES AND MEASURES

For the purpose of this study, the works of Dube at al, (2003) and Chapman et al (2004) provided significant contributions to the development of the measures used in the data collection and analysis.
3.6.1 Violence against children.

The indicators about violence against children used in this study are early life questions from the first wave of CAPS in 2002. Respondents were asked to reflect on their family life until age 14 years. The questions about child maltreatment includes how often a perpetrator (The perpetrator could be a parent, stepparent, or adult living in their home.):

(1) “swear at you, insult you, or put you down” (Put down);
(2) “made you afraid that you might be physically hurt” (Afraid of hurt);
(3) “push, grab, slap, or throw something at you” (Push);
(4) “hit you so hard that you had marks or were injured” (Hit hard).

Among them, (1) and (2) are considered as emotional abuse. (3) and (4) are understood as physical abuse. Other types of violence against children were not asked in this survey. Respondents were asked to report on a five-point scale to represent the frequency of childhood abuse: never, only once, sometimes, often, very often. This study generate 7 dummies of violence against children to measure childhood abuse experience:

(1) **Put down:** equals to 0 if the respondent indicated “never”, which means nobody has “swear at you, insult you, or put you down”, and 1 if the respondent indicated once or above;
(2) **Afraid of hurt:** equals to 0 if the respondent indicated “never”, which means nobody has “made you afraid that you might be physically hurt”, and 1 if the respondent indicated once or above;
(3) **Push:** equals to 0 if the respondent indicated “never”, which means nobody has “push, grab, slap, or throw something at you”, and 1 if the respondent indicated once or above;
(4) **Hit hard**: equals to 0 if the respondent indicated “never”, which means nobody has “hit you so hard that you had marks or were injured”, and 1 if the respondent indicated once or above;

(5) **Physical abuse**: equals to 0 if “Push” and “Hit hard” are all equals to 0, and 1 if one of the above two dummies equals to 1;

(6) **Emotional abuse**: equals to 0 if “Put down” and “Afraid of hurt” are all equals to 0, and 1 if one of the above two dummies equals to 1;

(7) **Child maltreatment**: equals to 0 if “Put down”, “Afraid of hurt”, “Push” and “Hit hard” are all equals to 0, and 1 if one of the above four dummies equals to 1;

### 3.6.2 Health outcomes

The indicators about violence against children used in this study are come from Wave 5. There are four indicators used in this study, including overall health indicator, physical health indicator and mental health indicator, They are:

1. **Self rated health.** It is an overall health indicator, which indicate that “In general, how is your health? Would you say it is excellent, very good, good, fair or poor?” The self rated health dummy equals to 1 if a respondent answers “excellent” or “very good”, which means the respondent think his/her health status is pretty good. The self rated health dummy equals to 0 if a respondent answers “good”, “fair” or “poor”.

2. **Health problem.** It is a physical health indicator, which indicate that “Do you have any health problems or disabilities?” which indicates the physical health of a respondent. If the answer is “Yes”, then the health problem dummy equals to 1, otherwise the dummy equals to 0.

3. **Obesity.** It is a physical health indicator. The value of this dummy is come from BMI(Body Mass Index), which is calculated through the weight(kg) of one person divided by his/her square of height(meters). The obesity dummy
equals to 1 if BMI $\geq$ 32, which means one is obese, otherwise the obesity dummy equals to 0.

(4) **Serious mental illness.** It is a physical health indicator. Serious mental illness in the past 30 days was measured using the Kessler Psychological Distress Scale (K6), which consists of six questions that assess a person’s general emotional state during a defined period of time. Each response is given a possible score between 0 (none of the time) and 4 (all of the time) and summed up for a total possible score between 0 and 24. A score of 12 or above indicates Serious Mental Illness, which indicates the dummy of serious mental illness equals to 1, otherwise it equals to 0;

3.6.3 Educational outcomes:

Two types of educational outcomes used in this study. They are test scores and education level. The test score indicators include literacy score, numeracy score and total score (literacy score + numeracy score), which are come from Wave 1. The indicator of education level is come from Wave 5.

(1) **Total score.** This indicator is the sum of a respondent’s literacy score and numeracy score, which range from 0 to 45. It is a continuous variable and the value of this variable is the correspondent total test score.

(2) **Literacy score.** The variable of literacy score comes from a literacy test and it ranges from 0 to 22. It is a continuous variable and the value of this variable is the correspondent literacy test score.

(3) **Numeracy score.** The variable of numeracy score comes from a numeracy test and it ranges from 0 to 23. It is a continuous variable and the value of this variable is the correspondent numeracy test score.

(4) **Education level.** It is a continuous variable and the value of this variable is the correspondent years of education the respondent complete. The question of this indicator is “What is the highest education level completed?”
Furthermore, a description of the measures and scales items in the questionnaire used in this study can be found in the Appendix A and Appendix C of this document, respectively.

3.6.4 Method

The model used in this study to estimate the long-term effect of childhood violence against children on health takes the form of the equation below:

\[ Health_i = \alpha_0 + \alpha_1 VAC_i + \alpha_2 X_i + \varepsilon_i \]  

(1)

where \( Health_i \) represents a health indicator of the \( i \)th respondent. \( VAC \) is an indicator for the \( i \)th respondent who had a substantiated case of a kind of maltreatment in childhood. \( X \) is the vector of control variables (including gender, race, age, education level, marital status, home language, household size, female-headed household, mother’s education and household per capita income). \( \varepsilon \) represents the error term. Since the indicators of dependent variable are binary, Logistic regression is used as the estimating method in this model. The model used in this study to estimate the impact of childhood violence against children on education takes the form of the equation below:

\[ Education_i = \beta_0 + \beta_1 VAC_i + \beta_2 X_i + \nu_i \]  

(2)

where \( Education_i \) represents a educational indicator of the \( i \)th respondent. \( \nu \) represents the error term. Other variables are the same as above. Since the indicators of dependent variable are continuous, the estimating method in this model is Ordinary Least Square (OLS).

3.7 CONCLUSION

The aim of this chapter was to provide a description of the data gathering and analysis methods, which would be used to address the aims and objectives of this study. As a secondary data analysis, the study utilises data from the CAPS to evaluate the impact of violence against children on human capital through health and education. Literature reviewed in Chapter 2 provides the theoretical premise for this empirical investigation.
and by adopting regression analysis will facilitate this empirical investigation hereafter. In subsequent Chapter, the results from the data analysis will be presented.
4 CHAPTER 4: DATA ANALYSIS

Subsequent to conducting regression logistic regression analysis on the abuse, health and education data from the CAPS, this chapter presents the results achieved with discussion on these results presented in the chapter thereafter. Descriptive statistics of respondents in this study can be found in the Appendix B

4.1 VIOLENCE AGAINST CHILDREN AND HEALTH

Table 1 presents the results Logistic regression model with different subtypes (Put down, Afraid of hurt, Push, Hit hard, Physical abuse, Mental abuse, Child maltreatment) of violence against children. To improve the presentation of the results on space, this study presents the full set of coefficients for the aggregate measure of violence against children only. Each model controls variables related to the dependent variable and odds ratio, 95% confidence intervals, pseudo-R-squared and observations of each model are reported in the table.

The first column reports the impact of violence against children on “Self rated health”. The results show that any experiences of being “hit hard” in childhood significantly decrease the probability of self-rated health. The second column reports the impact of violence against children on “Health problem”. The results shows that any experiences of being “hit hard” in childhood significantly increase the probability of physical health problem or disability. The third column reports the impact of violence against children on “Obesity”. It can be seen that any experiences of being “push” in childhood significantly increase the probability of obesity. Young adults who have experienced overall child maltreatment and physical abuse in childhood are more likely to be obese. The fourth column reports the impact of violence against children on “Serious mental illness”. It can be seen that any experience of being “Afraid of hurt”, being “push” or “hit hard” in childhood significantly increase the probability of serious mental illness. Among them, the odds ratios of “Push” or “Hit hard” are higher than “Afraid of hurt”, which indicates physical abuse in childhood.
has more long-term negative impact on health. Young adults who have experienced overall child maltreatment, physical abuse and emotional abuse in childhood are more likely to have serious mental illness. Therefore, childhood physical abuse have more long term impact on victims’ health, especially mental health.

Table 1: Logistic regression of violence against children and health

<table>
<thead>
<tr>
<th>Variable</th>
<th>Self rated health</th>
<th>Health problem</th>
<th>Obesity</th>
<th>Serious mental</th>
</tr>
</thead>
<tbody>
<tr>
<td>Put down</td>
<td>0.962</td>
<td>1.068</td>
<td>1.245</td>
<td>1.207</td>
</tr>
<tr>
<td></td>
<td>[0.820,1.129]</td>
<td>[0.780,1.463]</td>
<td>[0.955,1.623]</td>
<td>[0.883,1.648]</td>
</tr>
<tr>
<td>pseudo-R-squared</td>
<td>0.010</td>
<td>0.021</td>
<td>0.071</td>
<td>0.060</td>
</tr>
<tr>
<td>Observations</td>
<td>2641</td>
<td>2626</td>
<td>2665</td>
<td>2531</td>
</tr>
<tr>
<td>Afraid of hurt</td>
<td>0.909</td>
<td>1.276</td>
<td>1.065</td>
<td>1.360*</td>
</tr>
<tr>
<td></td>
<td>[0.763,1.082]</td>
<td>[0.917,1.775]</td>
<td>[0.802,1.413]</td>
<td>[0.986,1.877]</td>
</tr>
<tr>
<td>pseudo-R-squared</td>
<td>0.010</td>
<td>0.023</td>
<td>0.070</td>
<td>0.062</td>
</tr>
<tr>
<td>Observations</td>
<td>2641</td>
<td>2626</td>
<td>2665</td>
<td>2531</td>
</tr>
<tr>
<td>Push</td>
<td>1.04</td>
<td>1.284</td>
<td>1.380**</td>
<td>1.443**</td>
</tr>
<tr>
<td></td>
<td>[0.876,1.234]</td>
<td>[0.925,1.783]</td>
<td>[1.047,1.821]</td>
<td>[1.041,2.001]</td>
</tr>
<tr>
<td>pseudo-R-squared</td>
<td>0.010</td>
<td>0.023</td>
<td>0.072</td>
<td>0.063</td>
</tr>
<tr>
<td>Observations</td>
<td>2641</td>
<td>2626</td>
<td>2665</td>
<td>2531</td>
</tr>
<tr>
<td>Hit hard</td>
<td>0.820*</td>
<td>1.603**</td>
<td>1.302</td>
<td>1.660**</td>
</tr>
<tr>
<td></td>
<td>[0.648,1.038]</td>
<td>[1.055,2.437]</td>
<td>[0.889,1.909]</td>
<td>[1.092,2.525]</td>
</tr>
<tr>
<td>pseudo-R-squared</td>
<td>0.010</td>
<td>0.025</td>
<td>0.070</td>
<td>0.062</td>
</tr>
<tr>
<td>Observations</td>
<td>2641</td>
<td>2626</td>
<td>2665</td>
<td>2531</td>
</tr>
<tr>
<td>Physical abuse</td>
<td>0.985</td>
<td>1.257</td>
<td>1.344**</td>
<td>1.381*</td>
</tr>
<tr>
<td></td>
<td>[0.833,1.165]</td>
<td>[0.909,1.738]</td>
<td>[1.022,1.766]</td>
<td>[0.971,1.853]</td>
</tr>
<tr>
<td>pseudo-R-squared</td>
<td>0.010</td>
<td>0.023</td>
<td>0.072</td>
<td>0.063</td>
</tr>
<tr>
<td>Observations</td>
<td>2641</td>
<td>2626</td>
<td>2665</td>
<td>2531</td>
</tr>
<tr>
<td>Emotional abuse</td>
<td>0.931</td>
<td>1.226</td>
<td>1.236</td>
<td>1.361**</td>
</tr>
<tr>
<td></td>
<td>[0.794,1.092]</td>
<td>[0.892,1.684]</td>
<td>[0.947,1.613]</td>
<td>[1.008,1.891]</td>
</tr>
<tr>
<td>pseudo-R-squared</td>
<td>0.010</td>
<td>0.023</td>
<td>0.071</td>
<td>0.062</td>
</tr>
<tr>
<td>Observations</td>
<td>2641</td>
<td>2626</td>
<td>2665</td>
<td>2531</td>
</tr>
<tr>
<td>Child maltreatment</td>
<td>0.99</td>
<td>1.177</td>
<td>1.297*</td>
<td>1.311*</td>
</tr>
<tr>
<td></td>
<td>[0.842,1.164]</td>
<td>[0.852,1.626]</td>
<td>[0.988,1.703]</td>
<td>[0.953,1.803]</td>
</tr>
<tr>
<td>pseudo-R-squared</td>
<td>0.010</td>
<td>0.022</td>
<td>0.071</td>
<td>0.061</td>
</tr>
<tr>
<td>Observations</td>
<td>2641</td>
<td>2626</td>
<td>2665</td>
<td>2531</td>
</tr>
</tbody>
</table>
Exponentiated coefficients (Odds Ratio); 95% confidence intervals in brackets
Each coefficient comes from a separate regression. Regressions with all controls include the following: Male, African, Coloured, Age, Married, Separated, Have a child, Home language English, Household size, Female-headed household, Mother’s education level: Grade 7 or above, Mother’s education missing, Per capita income (Rands)

* p<0.1, ** p<0.05, *** p<0.01

4.1.1 Violence against children and education

Table 2 presents the results OLS regression model with different subtypes of violence against children in childhood. In Table 2, the first column reports the impact of different types of violence against children on “Total test score”. The results show that all subtypes of child maltreatment are negatively significant, which indicates that any experiences of being physical abuse and emotional abuse in childhood significantly decrease the total test score. Compare with the coefficient, physical violence has more severe educational consequences. The second column reports the impact of violence against children on “Literacy score”. The results shows that any experience of being “Push” in childhood significantly decrease the total test score. Youth or young adults who have experienced physical abuse in childhood are more likely to have lower literacy score. The third column reports the impact of violence against children on “Numeracy score”. It can be seen that all subtypes of child maltreatment are negatively significant, which indicates that any experience of being physical abuse and emotional abuse in childhood significantly decrease the numeracy score. Comparatively, physical violence has more adverse educational consequences. The fourth column reports the impact of violence against children on “Education level”. It can be seen that any experience of “Afraid of hurt”, being “put down”, “push” or “hit hard” in childhood significantly decrease the educational level. Among them, the coefficient of “Push” or “Hit hard” are higher than “Put down” and “Afraid of hurt”, which indicates physical abuse in childhood has more long term negative
impact on education. Overall, Child maltreatment, especially physical violence not only has adverse impact on short term learning ability, especially numeracy ability, but also has long term negative impact on education level, which indicates one who has experienced maltreatment in childhood are more likely to drop out from school in later life.

Table 2: OLS regression of violence against children and education

<table>
<thead>
<tr>
<th>Variable</th>
<th>Total test score</th>
<th>Literacy score</th>
<th>Numeracy score</th>
<th>Education level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Put down</td>
<td>-0.529*</td>
<td>-0.073</td>
<td>-0.456**</td>
<td>-0.452*</td>
</tr>
<tr>
<td></td>
<td>[-1.101,0.042]</td>
<td>[-0.337,0.190]</td>
<td>[-0.831,-0.082]</td>
<td>[-0.910,0.007]</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.199</td>
<td>0.168</td>
<td>0.178</td>
<td>0.086</td>
</tr>
<tr>
<td>Observations</td>
<td>2615</td>
<td>2615</td>
<td>2615</td>
<td>2643</td>
</tr>
<tr>
<td>Afraid of hurt</td>
<td>-0.800***</td>
<td>-0.239</td>
<td>-0.561***</td>
<td>-0.977***</td>
</tr>
<tr>
<td></td>
<td>[-1.425,-0.174]</td>
<td>[-0.528,0.049]</td>
<td>[-0.971,-0.151]</td>
<td>[-1.479,-0.476]</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.2</td>
<td>0.169</td>
<td>0.179</td>
<td>0.09</td>
</tr>
<tr>
<td>Observations</td>
<td>2615</td>
<td>2615</td>
<td>2615</td>
<td>2643</td>
</tr>
<tr>
<td>Push</td>
<td>-0.943***</td>
<td>-0.323**</td>
<td>-0.620***</td>
<td>-1.051***</td>
</tr>
<tr>
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<td>[-0.606,-0.040]</td>
<td>[-1.023,-0.218]</td>
<td>[-1.543,-0.560]</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.201</td>
<td>0.169</td>
<td>0.179</td>
<td>0.091</td>
</tr>
<tr>
<td>Observations</td>
<td>2615</td>
<td>2615</td>
<td>2615</td>
<td>2643</td>
</tr>
<tr>
<td>Hit hard</td>
<td>-0.884**</td>
<td>-0.158</td>
<td>-0.726**</td>
<td>-1.022***</td>
</tr>
<tr>
<td></td>
<td>[-1.739,-0.028]</td>
<td>[-0.553,0.237]</td>
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</tr>
<tr>
<td>R-squared</td>
<td>0.200</td>
<td>0.168</td>
<td>0.178</td>
<td>0.087</td>
</tr>
<tr>
<td>Observations</td>
<td>2615</td>
<td>2615</td>
<td>2615</td>
<td>2643</td>
</tr>
<tr>
<td>Physical abuse</td>
<td>-0.896***</td>
<td>-0.290**</td>
<td>-0.607***</td>
<td>-0.958***</td>
</tr>
<tr>
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<td>[-1.498,-0.294]</td>
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<tr>
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<td>0.169</td>
<td>0.179</td>
<td>0.09</td>
</tr>
<tr>
<td>Observations</td>
<td>2615</td>
<td>2615</td>
<td>2615</td>
<td>2643</td>
</tr>
<tr>
<td>Emotional abuse</td>
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<td>-0.173</td>
<td>-0.536***</td>
<td>-0.687***</td>
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<tr>
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<td>[-1.280,-0.137]</td>
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<td>[-1.145,-0.229]</td>
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<tr>
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<td>0.2</td>
<td>0.168</td>
<td>0.179</td>
<td>0.087</td>
</tr>
<tr>
<td>Observations</td>
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<td>2615</td>
<td>2615</td>
<td>2643</td>
</tr>
<tr>
<td>Child maltreatment</td>
<td>-0.854***</td>
<td>-0.209</td>
<td>-0.646***</td>
<td>-0.749***</td>
</tr>
<tr>
<td></td>
<td>[-1.434,-0.275]</td>
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<td>[-1.025,-0.266]</td>
<td>[-1.214,-0.284]</td>
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<tr>
<td>R-squared</td>
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<td>0.169</td>
<td>0.180</td>
<td>0.088</td>
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<td>2615</td>
<td>2643</td>
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</tbody>
</table>
95% confidence intervals in brackets
Each coefficient comes from a separate regression. Regressions with all controls include the following: Male, African, Coloured, Age, Married, Separated, Have a child, Home language English, Household size, Female-headed household, Mother’s education level: Grade 7 or above, Mother’s education missing, Per capita income (Rands)
* p<0.1, ** p<0.05, *** p<0.01

4.1.2 The impact of violence against children: gender differences

Violence against children and health: gender difference
Table 3 shows the odds ratio, 95% confidence intervals, pseudo-R-squared and observations of each Logistic regression models by gender, which indicates the relationship between any experience of violence against children and young adult’s health. From the perspective of “Self rated health”, result shows that emotional abuse in childhood has significant negative impact on male’s “self rated health” and no indicators of violence against children are significant on the “self rated health” of female young adults. From the perspective of “Health problem”, results shows that all subtypes of child maltreatment are positively significant in the male subgroup regression, which indicates that any experience of being physical abuse and emotional abuse in childhood significantly increase the probability of male’s health problem or disability. However, no indicators of violence against children are significant on the “Health problem” of female young adults. From the perspective of “Obesity”, any experience of being “Put down” or “Hit hard” in childhood significantly increase the probability of obesity of male young adults, any experience of being “Push” in childhood significantly increase the probability of obesity of female young adults. From the perspective of “Serious mental illness”, any experience of “Afraid of hurt” in childhood significantly increase the probability of serious mental illness of male young adults and any experience of “Push” or “Hit hard” in childhood significantly increase the probability of serious mental illness of female young adults. Therefore,
comparatively, violence against children, especially physical violence, has more adverse long term impact on male’s physical health and long term impact on female’s mental health.

4.1.3 Violence against children and education: gender difference

Table 4 shows the odds ratio, 95% confidence intervals, R-squared and observations of each OLS regression models by gender, which indicates the relationship between any experience of violence against children and young adult’s education, including short term test score and long term education level. From the perspective of “Self rated health”, results shows that any experience of “Afraid of hurt” in childhood has significant negative impact on male’s “Total test score” and experience of “Push” or “Hit hard” in childhood has significant negative impact on female’s “Total test score”. From the perspective of “Literacy score”, results shows that any experience of “Afraid of hurt” in childhood has significant negative impact on male’s “Literacy score” and experience of “Push” in childhood has significant negative impact on female’s “Literacy score”. From the perspective of “Numeracy score”, results shows that any experience of “Afraid of hurt” in childhood has significant negative impact on male’s “Numeracy score” and all subtypes of child maltreatment experience in childhood has significant negative impact on female’s “Numeracy score”. From the perspective of “Education level”, results shows that all subtypes of child maltreatment except “Put down” are negatively significant in both male and female subgroup, which indicates that any experience of being physical abuse and “Afraid of hurt” in childhood significantly decrease the education level of male and female. Comparatively, the absolute value of coefficient in female group is a little higher. Overall, Violence against children, especially physical violence has more adverse impact on female’s learning ability, especially numeracy ability. Meanwhile, Violence against children also has slightly more negative impact on female’s education level, which indicates female who has experienced maltreatment in childhood are more likely to drop out from school in later life.
Table 3: Gender difference of violence against children and health

<table>
<thead>
<tr>
<th>Variable</th>
<th>Male</th>
<th></th>
<th></th>
<th>Female</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Self rated health</td>
<td>Health problem</td>
<td>Obesity</td>
<td>Serious mental illness</td>
<td>Self rated health</td>
<td>Health problem</td>
</tr>
<tr>
<td>Put down</td>
<td>0.884</td>
<td>1.879**</td>
<td>1.688*</td>
<td>1.572</td>
<td>1.037</td>
<td>0.785</td>
</tr>
<tr>
<td></td>
<td>[0.696,1.125]</td>
<td>[1.079,3.272]</td>
<td>[0.984,2.897]</td>
<td>[0.907,2.723]</td>
<td>[0.836,1.287]</td>
<td>[0.532,1.160]</td>
</tr>
<tr>
<td>pseudo-R-squared</td>
<td>0.013</td>
<td>0.041</td>
<td>0.032</td>
<td>0.114</td>
<td>0.013</td>
<td>0.017</td>
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<tr>
<td>Observations</td>
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<td>1168</td>
<td>1150</td>
<td>1135</td>
<td>1446</td>
<td>1441</td>
</tr>
<tr>
<td>Afraid of hurt</td>
<td>0.806</td>
<td>1.959**</td>
<td>1.33</td>
<td>2.014**</td>
<td>1.001</td>
<td>1.02</td>
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<td>[0.617,1.052]</td>
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<td>[0.758,2.331]</td>
<td>[1.158,3.503]</td>
<td>[0.794,1.263]</td>
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<tr>
<td>pseudo-R-squared</td>
<td>0.014</td>
<td>0.042</td>
<td>0.026</td>
<td>0.121</td>
<td>0.013</td>
<td>0.016</td>
</tr>
<tr>
<td>Observations</td>
<td>1195</td>
<td>1168</td>
<td>1150</td>
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<td>1441</td>
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<tr>
<td>Push</td>
<td>1.054</td>
<td>1.626*</td>
<td>1.462</td>
<td>1.492</td>
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<td>1.142</td>
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<td>[0.814,1.364]</td>
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<td>[0.852,2.509]</td>
<td>[0.828,2.688]</td>
<td>[0.817,1.297]</td>
<td>[0.759,1.717]</td>
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<tr>
<td>pseudo-R-squared</td>
<td>0.013</td>
<td>0.036</td>
<td>0.028</td>
<td>0.112</td>
<td>0.013</td>
<td>0.016</td>
</tr>
<tr>
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<td>1195</td>
<td>1168</td>
<td>1150</td>
<td>1135</td>
<td>1446</td>
<td>1441</td>
</tr>
<tr>
<td>Hit hard</td>
<td>0.844</td>
<td>2.737***</td>
<td>2.207**</td>
<td>1.595</td>
<td>0.823</td>
<td>1.141</td>
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<td>[0.738,3.447]</td>
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<td>[0.651,1.999]</td>
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<tr>
<td>pseudo-R-squared</td>
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<td>0.047</td>
<td>0.035</td>
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<td>0.014</td>
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<td>1168</td>
<td>1150</td>
<td>1135</td>
<td>1446</td>
<td>1441</td>
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<tr>
<td>Physical abuse</td>
<td>1.03</td>
<td>1.612*</td>
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<td>1.468</td>
<td>0.954</td>
<td>1.119</td>
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<td>[0.880,2.577]</td>
<td>[0.821,2.627]</td>
<td>[0.761,1.195]</td>
<td>[0.749,1.672]</td>
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<tr>
<td>Emotional abuse</td>
<td>0.815*</td>
<td>2.487***</td>
<td>1.758**</td>
<td>1.648*</td>
<td>1.047</td>
<td>0.851</td>
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</tr>
<tr>
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<td>[1.010,3.061]</td>
<td>[0.952,2.855]</td>
<td>[0.844,1.299]</td>
<td>[0.577,1.253]</td>
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<tr>
<td>Child maltreatment</td>
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<td>2.449***</td>
<td>1.778*</td>
<td>1.543</td>
<td>1.081</td>
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<td>Exponentiated coefficients (Odds Ratio); 95% confidence intervals in brackets</td>
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<td>Each coefficient comes from a separate regression. Regressions with all controls include the following: Male, African, Coloured, Age, Married, Separated, Have a child, Home language English, Household size, Female-headed household, Mother’s education level: Grade 7 or above, Mother’s education missing, Per capita income (Rands)</td>
<td></td>
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<tr>
<td>* p&lt;0.1, ** p&lt;0.05, *** p&lt;0.01</td>
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Table 4: Gender difference of violence against children and education

<table>
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<tr>
<th>Variable</th>
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<th></th>
<th>Total test score</th>
<th>Lite</th>
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<td></td>
<td>Total test score</td>
<td>Literacy score</td>
<td>Numeracy score</td>
<td>Education level</td>
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<tr>
<td>Put down</td>
<td>-0.524</td>
<td>-0.105</td>
<td>-0.419</td>
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<tr>
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<td></td>
<td>0.218</td>
<td>0.163</td>
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<tr>
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<td>1186</td>
<td>1186</td>
<td>1196</td>
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<td></td>
</tr>
<tr>
<td>Afraid of hurt</td>
<td>-1.061**</td>
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<td>-0.933**</td>
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<tr>
<td>Push</td>
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<td>-1.190***</td>
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<td>0.208</td>
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<td>1186</td>
<td>1196</td>
<td>1429</td>
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</tr>
<tr>
<td>Hit hard</td>
<td>-0.494</td>
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<td>-1.003*</td>
<td>-1.274**</td>
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<td></td>
<td>0.217</td>
<td>0.163</td>
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<td>-0.951**</td>
<td>-1.219***</td>
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<td>0.207</td>
<td>0.104</td>
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<td>1186</td>
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<td>-0.739**</td>
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<td>0.163</td>
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<tr>
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<td>1196</td>
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<td>-0.132</td>
<td>-0.431</td>
<td>-0.666*</td>
<td>-1.109***</td>
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<td>[-1.378,0.047]</td>
<td>[-1.852,-0.366]</td>
<td>[-0.50]</td>
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<tr>
<td></td>
<td>0.218</td>
<td>0.163</td>
<td>0.208</td>
<td>0.102</td>
<td>0.193</td>
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<tr>
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</tbody>
</table>

95% confidence intervals in brackets
Each coefficient comes from a separate regression. Regressions with all controls include the following: Male, African, Coloured, Age, Married, Separated, Have a child, Home language English, Household size, Female-headed household, Mother’s education level: Grade 7 or above, Mother’s education missing, Per capita income (Rands)
* p<0.1, ** p<0.05, *** p<0.01
5 DISCUSSION AND RECOMMENDATION

The premise of this study was to identify the impact of violence against children on human capital in South Africa through education and health. To guide this study, a set of objectives were set as measure of success which would enable further insight into the relationship between human capital and violence against children in South Africa. Based on results achieved in the Chapter hitherto, the objectives of this study were addressed thus:

Impact of violence against children on human capital with specific focus on education
Within the scope of reviewed literature for this study, the observed general consensus is a negative relationship between violence against children and their human capital, such that a prevalence of acts of child abuse, in any form, results in decreased human capital value. However, in comparison to the impact on health, the impact of abuse on education is the only human capital facet, which garnered contentious arguments between researchers. While Shepherd (1996) argued that violence against children results in improved academic performances in some cases, other researchers (Lowenthal 2001; Perry 2004; 2005) argued contrarily with assertions and results of decreased test scores, poor numeracy and literacy skills as well as reported instanced of poor educational levels of abused children and adults who were abused as children (Contreras et al's, 2016; Tanaka et al, 2014; Huang & Mossige, 2012). Results from this study provided contrary evidence to arguments refuting a positive impact of violence against children on education as results show that singular or multiple instances of physical or emotional violence negatively impacts numeracy, literacy skills as well as long term educational value of adults abused as children. Consequently, these results provide validation to assertions that violence against children negatively impacts their education and subsequently presents a ominous forecast for the growth and development of children in South Africa as the level of education of these victims contributes to their human capital value as well as their ability to contribute to the growth and development of the nation

Impact of violence against children on human capital with specific focus on health
The premise for this objective stems from asserted relationships between violence against children and health from several researchers (Jaffé et al, 2005; Perry, 2004; Finkelhor et al, 2005; Garbarino, 1992, 2001; Groves, 1997, 2002, Morgan & Zedner 1992, Wolfe et al, 2003). The results from this current study validate these assertions and concurs with results in these previously studies (Bicakci, 2016; Yegidis, 1992, Morgan and Zedner 1992, Walker 1993, Springer et al's, 2007, Shaw & Krause, 2002 and Goodwin et al 2003), confirming that all forms of violence results in adverse physical and psychological as well as short-term and long-term impact on the health of victims. It is necessary to note that, the results indicated worse impacts of violence against children on male victims than female victims as no indicators of abuse were found to impact female self-rated health and health problems apart from physical abuse resulting in increased probability of obesity and mental health issues in women. Nonetheless, either one or multiple forms of violence were shown to cause adverse health conditions for victims and these results provide a clearer insight on the debilitating impact violence against children has on the health of victims, and ultimately on their human capital value in South Africa. As noted by Doodge (2007) and Pettinger (2017), the development of an individual through childhood, particularly with respect to education and health, plays a significant role in their ability to contribute positively to their environment, determines their human capital value and ultimately determines the growth and development of the environment as well. With violence against children reported to be prevalent and militating the physical and psychological well-being of children with short-term consequences in childhood and long-term consequences in adulthood, addressing this trend with strategies to mitigate violence against children is a worthwhile endeavour in improving the health and well-being of children and improving the value of their human capital as well.

5.1 Strategies to address violence against children within South Africa

This study provides a surgical analysis of the relationship between human capital and violence against children and provides extensive theoretical and empirical knowledge on the identified relationship herein. Consequently, this study also provides a theoretical and empirical premise for further studies into the various facets of human capital, and other facets of growth and development in South Africa such as financial,
social and even technology capital, which can be influenced by human rights violations such as child abuse, racism and inequality.

Statistics show that the global costs related to physical, psychological and sexual violence alone are between 3% and 8% of global GDP (Perez nieto et al, 2014). Evidently, statistics such as these, as well as reviewed literature indicate that violence against children is a global human rights violation with millions of children affected in countries across the globe. Furthermore, considering the multifaceted negative outcomes of violence against children and its impact on facets of society, violence against children presents an ominous scenario for victims and their environments. Moreover, Mikton and Butchart (2009) agree that address violence against child after-the fact is a more costly endeavour than addressing it pre-emptively. Therefore, addressing this issue requires strategic policies and frameworks, which can mitigate the occurrence of abuse. To do so, first consider the causes of child abuse discussed in this study. Poverty and Culture have been identified as antecedents, which can foster abusive environments against children.

5.1.1 Addressing violence against children perpetrated by parents

Violence against children has been reported to be prevalent in homes of low socio-economic status as well as the debilitating burdens the health consequences of abuse can put on these already financially impoverished homes, this study suggests Proper Parenting Programmes which should also be specifically targeted at low income homes. This approach has previously suggested and implemented by researchers such as Knerr et al., (2013), who assert that parents or individuals with custodial authority over children tend to abuse these children, both knowingly and unknowingly, due to a lack of knowledge on proper parenting skills. Consider the Chicago Child-Parent Programmes which provides low-income families with financial, academic and advisory support to families with children in their pre-schools years with the aim of educating the parents on appropriate parenting techniques and engaging them in child-focused activities aimed at aiding optimal cognitive and physiological development in the child. A 15-year review of this programme by Reynolds (2001; 2002) revealed that children whose parents actively engaged in this programme experienced improved high school completion percentages, reduced child maltreatment, reduced
cases of juvenile delinquences, reduced cases of depression and reduced tendency to commit crimes.

The issue of culture plays a significant role in the child abuse prevention strategies implemented in Liberia as physical abuse is a grossly normalise form of chastisement within the country (Pereznieto et al, 2014). Consequently, the International Rescue Committee (IRC) established the Parents Make The Difference Programme to mitigate violence against children by educating parents on appropriate parenting skills and malaria prevention practices. As a result of this project, instances of violence against children significantly reduced due to, reduced use of physical and emotional abuse by parents and caregivers and increased adoption of positive parenting practices (Sim, 2014).

These case studies show that efforts to curb violence against children by building the parenting capacity of parents and caregivers through Proper Parenting Programmes is a worthwhile strategy in ensuring the human capital, and ultimately growth and development of South Africa is enhanced and ensured respectively. In light of these specific activities, which could foster improved parenting capacity include:

- **Parent-Teacher workshops and conferences:** Where parents and teachers can discuss positive parenting child welfare techniques and disseminate ideas. Parents can learn how to make the home a safer place for child and foster growth and development while teachers can learn proper techniques to create a safer teaching and learning environment for students.

- **Awareness campaigns using various forms of media:** Various forms of media can be used to supplement awareness campaigns and disseminate relevant information across a wide-range of demographics, particularly the poor and low-income demographics. Advertisements, talk shows and interviews can be done on television, online, radio and other media to educate parents and teachers on child abuse and proper parenting techniques as well as address inherent cultures that jeopardise the well-being of children in South Africa.
5.1.2 Addressing violence against children in Schools

As evidenced in the reviewed literature, physical and emotional abuse are not only perpetrated by parents at home but by peers and teachers in schools. Consequently, while addressing the incidence of violence against children at home, it is also pertinent to establish policies and frameworks for addressing violence against children in schools as well. Across the globe, case studies exist whose successes in mitigating child abuse in schools can be emulated within the context of South Africa's school environment.

In Uganda, 60% of in-school children reported being victims of physical abuse, 76% were victims of sexual abuse within school settings (Save The Children, 2005). Those statistics maybe antiquated, ChildHope (2017) reports that prevalent cases of abuse in schools creates an apprehension in students to continue their education, resulting in over 66% dropout amongst affected children in primary and secondary school. Consequently, a partnership between ChildHope, a charity organisation established in 1989 with the purpose of protecting the welfare of children across the globe (ChildHope, 2017), and African Network for Prevention and Protection Against Children Abuse and Neglect-Uganda (ANPPCAN), birthed an anti-violence against children project in 2010 which aims to reduce the prevalence of violence against children in schools and eliminate the preference for physical and emotional abuse as appropriate discipline methods by education teachers and on the short and long term consequences of abuse on children, as well as providing sensitisation talks, trainings and policy development all aimed at building the capacity of teachers to ensure the well-being of students as well as providing frameworks to guide the behaviours of all individuals within school environments.

Evidently, much like efforts to curb violence against children at home, endeavours within the school environment focus on capacity building on appropriate techniques to take care of children as well as raising awareness on the impact of violence against them. These strategies provide appropriate templates for relevant individuals, organisations and the South African government to reproduce and implement.
5.1.3 Governmental efforts to address violence against children

In addition to awareness and capacity building campaigns which can be established and curated by individuals, organisations and governments, such as in the case studies cited hitherto, certain efforts to address violence against children fall within solely within the authoritative jurisdiction of governments to establish and implement. A case study of such efforts can be found in Zanzibar where Save The Children, a charity organisation established to cater to the needs of disadvantaged children across the globe, worked with Zanzibar’s government to establish Child Protection Units which are managed by the Police Force and Department of Social Welfare. The aim of this project was to provide a structured, government regulated system, which empowers Children to report cases of abuse to authorities who utilise appropriate procedures and policies address issues of abuse against children. In addition, the project also conducts capacity building exercises for teachers, parents, children, researchers and lawyers on the promoting positive discipline methods in schools and protecting the welfare of children. ChildHope has also collaborated with the University of Zanzibar to establish a diploma course on Child welfare (Pounds and Hewison, 2013). Consequently, these efforts have led to reduced cases of child abuse in Zanzibar and increased awareness of cases, which had previously gone unreported, which are currently being handled by the Child Protection Unit.

In light of ChildHope's efforts to curb violence against children in Uganda, addressing violence against children can take a similar approach as, in addition to empowering parents with knowledge on proper parent techniques, empowering teachers and students to provide care and discipline appropriately as well as providing avenues for children and other concerned individual to report cases of child abuse.

Furthermore, The South African government should consider collaborating with child welfare organisations such as UNICEF and ChildHope to establish government regulated Child Protection agencies as well as Child Protection offices in strategic locations such as schools, police stations and religious institutions with the aim of providing multiple channels where victims of child abuse can report these cases and have them treated by the relevant authorities and professional trained individuals.
5.1.4 Policies For Curbing Violence Against Children And Improving SA Human Capital

The status of child abuse policies in South Africa requires both elaboration and review as these set the premise for future policy and guidelines for addressing violence against children in the nation and safeguarding the education and health of its human capital. Consequently, Nierkerk (2006) here are some noteworthy policies from SA

The Children's Act: This legislature takes a primary focus at developing a strong family framework, which provides the child with foundational developmental needs and creates a safe, healthy environment for children to develop. However, the Act has faced several challenges in its implementation as well as raised concerns, which should be mitigated by further revisions to the bill, particularly in light of results achieved in this study. Some of the challenges with the Act's implementation include:

- Lack of requisite personnel: The Children's Act has implementation issues in the area of requisite personnel as there is a current lack of professionals such as social workers and healthcare professionals to curate incidents which fall under the mandate of the Act. Consequently, The Act's focus on building the capacity of families, faces limitations in its real-world application as children who require medical attention due to issues of abuse or neglect, may not be adequately cared for under this Act. Furthermore, the lack of required social workers means the

- Cultural Controversy: The Children's Act provides children with access to HIV/AIDS test, contraceptives and other healthcare services and despite the benefits of these services to teenagers with health needs, critics argue that it circumvents moral standards and encourages young adults to engage in dissipation.

- Furthermore, the Act highlighted the increasing impact of HIV/AIDS on the lives of children in the nation with the specific highlights on the generational impact of the disease from children orphaned due deceased parents who died.
from the disease as well as children living with HIV/AIDS contacted through various means such as sexual abuse.

Other notable policies include the Child Justice Act, The Criminal Law Amendment Act, The National Strategy for Child Protection and School feeding programmes. A candied review of these policies exhumes a legislative cavity in directly addressing the education and health needs of children who are at risk, or victims or violence. Considering the results of this study lends pertinence to the establishment of such policies, the author goes forward to suggest certain contributions to such policies for future consideration:

- **Children at risk at school and homes**: A national policy is required to address at risk children and victims of child abuse in schools and homes. These environments provide a principal opportunity to assuage incidences of violence against children as well as provide pre-emptive measures to assist children.

- **Healthcare services for at risk children and victims**: A dedicated national policy is required, aimed at providing sufficient, subsidised healthcare services to children at risk, or victimised by acts of violence. Health issues such as pregnancy, sexually transmitted diseases, bruising and scaring, depression, etc. The aim of this policy is to safeguard the health of South Africa's human capital through a government initiated mandate.

- **Special Education and rehabilitation services for victims for victims of violence**: Evidence from existing literature, as well as results from this study. Victims of acts of violence are susceptible to adverse consequences. This risk is increasingly probable is abused children and left without post-incidence assistance such as counselling, rehabilitation and special education services. The aim of such a policy would be to recoup human capital which would have lavished due to acts of violence against children. By establishing and implementing such a policy, South Africa would have a greater chance of improving its human capital from both children who have not be victims of violence as well as those who have experienced it as well.
It is necessary to note that for these policies to be created, implemented and to be effective, certain antecedents must be in place as well. These include, but are not limited to, adequate funding, required personnel and expertise for implementation and execution, political backing for political stakeholders, partnership from international bodies such as UNICEF for financial and developmental issues.

5.2 LIMITATIONS AND FUTURE RESEARCH

This study's use of primary data from the CAPS consequently sets this study with certain limitations inherent in the primary study.

A theme in both reviewed theoretical arguments and empirical studies, such as the CAPS, is a consensus regarding the inability to generalise arguments and statistics regarding the magnitude of child abuse cases because of the lack of comprehensive data, from sources such as reported cases by children or child abuse authorities. Consequently, there is a need for concerted efforts to augment efforts to establish extensive longitudinal data repositories on instances and the prevalence against children as well as data on the impacts of abuse and abuse prevention efforts. Establishing and maintaining such an comprehensive database will provide critical information on child welfare trends in the country, more rigorous generalizable data for child welfare awareness campaigns and studies as well as enable solution providers to proffer actionable solutions based on accurate knowledge prevalent child welfare issues within the country.

Another limitation of this study, is a lack of consideration given to sexual abuse, neglect and child labour which also constitute forms of violence against children. Though the CAPS provided data on sexual abuse and neglect, this study focused primarily on physical and emotional abuse based on the premise that both neglect and sexual abuse constitute forms of physical and sexual abuse with both physical and physiological consequence. However, future related studies may include sexual abuse, neglect and child labour as additional forms of child abuse in their studies.

Lastly, reviewed literature proposes that instances of violence against children are prevalent in low income homes and despite suggestions of socio-economic status
acting as an antecedent to violence against children, studies has lack extensive empirical evaluation of this supposed relationship and this provides a worthwhile opportunity for future research to investigate and provide additional knowledge on child abuse trends amongst various socio-economic demographic segregations with the aim of providing further solutions for preventing and elimination child abuse. low-income

5.3 CONCLUSION

This study successfully identified a relationship between child abuse and human capital and health with results showing significant negative impacts of physical and emotional abuse on children's short-term and long-term health and education. Evidently, these results confirm assertions in literature that children, who experience one or more forms of abuse in their childhood, will experience poor health, well-being and educational level in both childhood and adulthood. With the prospect of an increasing number of children suffering various forms of abuse, the potential for children growing into poorly educated unhealthy adults does not bode well for the human capital, growth and development of South Africa. Ultimately, the human capital value of children in South Africa is in jeopardy as, in addition to this study providing further evidence for the South African government and organisations on the magnitude of child abuse's within the nation, violence against children, if unaddressed will result in a significantly less productivity, unhealthy and poorly educated labour force, unable to contribute positively and effectively to endeavours in the South Africa society. However, capacity building and awareness strategies have been suggested in this study for South Africa which emulate existing strategies which have been successful in curbing the prevalence of violence against children in other global counterparts
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APPENDIX A

Measure
Violence against children(Wave1):

The questions about child maltreatment includes how often a perpetrator (1=Once or above, 0=Never)
(1) “swear at you, insult you, or put you down” (Put down);
(2) “made you afraid that you might be physically hurt” (Afraid of hurt);
(3) “push, grab, slap, or throw something at you” (Push) ;
(4) “hit you so hard that you had marks or were injured” (Hit hard).

Among them, (1) and (2) can be considered as emotional abuse and (3) and (4) can be understood as physical abuse.

Health outcomes(Wave 5, Obesity:Wave4):
1. Self rated health:”In general, how is your health? Would you say it is excellent, very good, good, fair or poor?” (1= excellent or very good, 0=other)
2. physical health: “Do you have any health problems or disabilities?” (1=Yes, 0=No); Obesity(1=Yes:BMI>=32, 0=No:BMI<32)
3. Mental health: Mental distress in the past 30 days was measured using the Kessler Psychological Distress Scale (K6), which consists of six questions that assess a person’s general emotional state during a defined period of time. Each response is given a possible score between 0 (none of the time) and 4 (all of the time) and summed up for a total possible score between 0 and 24. A score of 12 or above indicates Serious Mental Illness(1=Yes, 0=No);

Educational outcomes(Education level:Wave5;Test score:Wave1 ):
1. Education level: “What is the highest education level completed?”(years)
2. Total score: Literacy score+Numeracy score
3. Literacy score
4. Numeracy score
## APPENDIX B

### Descriptive Statistics

#### Gender and Race Difference of Violence Against Children

<table>
<thead>
<tr>
<th>Variable</th>
<th>Total (N=2644)</th>
<th>Gender</th>
<th>Race</th>
<th>T test</th>
<th>Gender</th>
<th>Male</th>
<th>T test</th>
<th>Race</th>
<th>T test</th>
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<td>Put down</td>
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<td>0.51</td>
<td>0.47</td>
<td>1.80 *</td>
<td>0.42</td>
<td>0.57</td>
<td>-7.77 ***</td>
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<td>Afraid of hurt</td>
<td>0.29</td>
<td>0.30</td>
<td>0.27</td>
<td>1.96 **</td>
<td>0.32</td>
<td>0.27</td>
<td>3.18 ***</td>
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<td>0.32</td>
<td>-0.20</td>
<td>0.24</td>
<td>0.39</td>
<td>-8.09 ***</td>
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<td>Hit hard</td>
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<td>0.16</td>
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#### Health and Education Difference of Violence Against Children

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<td>Obesity</td>
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Violence Against children and Self Rated Health
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<td>0.06</td>
<td>0.09</td>
<td>0.07</td>
<td>25.86</td>
<td>16.76</td>
<td>9.1</td>
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<td>Yes</td>
<td>0.6</td>
<td>0.07</td>
<td>0.11</td>
<td>0.08</td>
<td>25.68</td>
<td>16.87</td>
<td>8.81</td>
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**Individual and household characteristics (N=2644)**

<table>
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<tr>
<th>Variable</th>
<th>Mean(sample)</th>
<th>Mean(weighted)</th>
<th>Standard deviation</th>
<th>Wave</th>
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<tbody>
<tr>
<td>Individual Characteristics</td>
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<tr>
<td>Male</td>
<td>0.45</td>
<td>0.49</td>
<td>0.50</td>
<td>Wave 5</td>
</tr>
<tr>
<td>African</td>
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<td>0.29</td>
<td>0.50</td>
<td>Wave 5</td>
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<td>Characteristics</td>
<td>Wave 1</td>
<td>Wave 5</td>
<td>Wave 1</td>
<td>Wave 5</td>
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<td>--------</td>
<td>---------</td>
<td>--------</td>
<td>---------</td>
</tr>
<tr>
<td>Coloured</td>
<td>0.50</td>
<td>0.56</td>
<td>0.50</td>
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</tr>
<tr>
<td>Age</td>
<td>24.47</td>
<td>24.67</td>
<td>2.58</td>
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</tr>
<tr>
<td>In school</td>
<td>0.09</td>
<td>0.11</td>
<td>0.28</td>
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</tr>
<tr>
<td>Married</td>
<td>0.14</td>
<td>0.16</td>
<td>0.35</td>
<td></td>
</tr>
<tr>
<td>Separated</td>
<td>0.02</td>
<td>0.02</td>
<td>0.13</td>
<td></td>
</tr>
<tr>
<td>Have a child</td>
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<td>0.29</td>
<td>0.47</td>
<td></td>
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<tr>
<td>Household Characteristics</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Home language English</td>
<td>0.16</td>
<td>0.24</td>
<td>0.36</td>
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<tr>
<td>Household size</td>
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<td>5.55</td>
<td>2.50</td>
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<tr>
<td>Female-headed household</td>
<td>0.40</td>
<td>0.38</td>
<td>0.12</td>
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<tr>
<td>Mother’s education level: Grade 7 or above</td>
<td>0.12</td>
<td>0.10</td>
<td>0.33</td>
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<tr>
<td>Mother’s education missing</td>
<td>0.82</td>
<td>0.85</td>
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<tr>
<td>Per capita income (Rands)</td>
<td>831.45</td>
<td>1351.91</td>
<td>1435.69</td>
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</tr>
</tbody>
</table>
APPENDIX C

Health outcomes:

4. Self rated health: “In general, how is your health? Would you say it is excellent, very good, good, fair or poor?”

5. Physical health: “Do you have any health problems or disabilities?” “How often does poor health or physical disability interfere with your ability to study, to work, or to search for work?” “In the past 12 months have you been to a Doctor / Nurse / Hospital / Clinic?” “In the past 12 months have you been to a Sangoma / Inyanga (Herbalist)?”

6. Mental health: Mental distress in the past 30 days was measured using the Kessler Psychological Distress Scale (K6), which consists of six questions that assess a person’s general emotional state during a defined period of time. Each response is given a possible score between 0 (none of the time) and 4 (all of the time) and summed up for a total possible score between 0 and 24. A score of 5 or above indicates mental distress; “In the past 12 months have you been to a Spiritual healer?”

7. BMI

Educational outcomes:

5. Education level: “What is the highest education level completed?”

6. Matric examination:
<table>
<thead>
<tr>
<th>Old matric examination (up to 2007)</th>
<th>National Senior Certificate (2008)</th>
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<tbody>
<tr>
<td>Circle each subject taken for matric</td>
<td>Circle each subject taken for NSC in 2008</td>
</tr>
<tr>
<td>RESULT / SYMBOL ACHIEVED:</td>
<td>RESULT / SYMBOL ACHIEVED:</td>
</tr>
<tr>
<td>1=A 2=B 3=C 4=D 5=E 6=F 9=Don't know</td>
<td>1=Higher grade 2=Standard grade 3=Lower grade 9=Don't know</td>
</tr>
<tr>
<td>C9.1 English 1st language 01</td>
<td>C9.1 English 1st language 21</td>
</tr>
<tr>
<td>C9.2 English 2nd language 02</td>
<td>C9.2 English 2nd language 22</td>
</tr>
<tr>
<td>C9.3 Afrikaans 1st language 03</td>
<td>C9.3 Afrikaans 1st language 23</td>
</tr>
<tr>
<td>C9.4 Afrikaans 2nd language 04</td>
<td>C9.4 Afrikaans 2nd language 24</td>
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<tr>
<td>C9.5 Mathematics 05</td>
<td>C9.5 Mathematics 25</td>
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<tr>
<td>C9.6 Biology 06</td>
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<td>C9.7 Geography 07</td>
<td>C9.7 Geography 27</td>
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<td>C9.8 Business economics 08</td>
<td>C9.8 Business economics 28</td>
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<tr>
<td>C9.9 Economics 09</td>
<td>C9.9 Economics 29</td>
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<td>C9.10 Home economics 10</td>
<td>C9.10 Home economics 30</td>
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<td>C9.11 History 11</td>
<td>C9.11 History 31</td>
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<tr>
<td>C9.12 IsiXhosa 1st language 12</td>
<td>C9.12 IsiXhosa 1st language 32</td>
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<td>C9.13 Physical science 13</td>
<td>C9.13 Physical science 33</td>
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<td>C9.14 Accounting 14</td>
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<td>C9.15 Biblical studies 15</td>
<td>C9.15 Biblical studies 35</td>
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<tr>
<td>C9.16 Life Orientation 16</td>
<td>C9.16 Life Orientation 36</td>
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<tr>
<td>C9.17 Maths Literacy 17</td>
<td>C9.17 Maths Literacy 37</td>
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<tr>
<td>C9.18 Other, specify: 18</td>
<td>C9.18 Other, specify:</td>
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7.