Workplace Violence and Mental Health of Mine Workers in Northwest Province: A Mediation Study

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Thesis submitted for the degree of Doctor of Philosophy in Psychology at the Mafikeng Campus of the North-West University.

Promoter: Prof. E.S Idemudia

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CERTIFICATION

I certify that this research was carried out by Mikateko MABUNDA (Student Number: 23367008) of the Department of Psychology, North-West University (Mafikeng Caampus), South Africa under my supervision.

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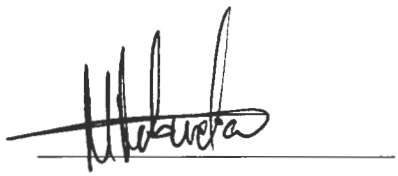
DECLARATION

I, Mikateko Mabunda, declare that this Thesis, submitted by me for the award of Doctor of Philosophy in Psychology degree at the North-West University, is my own independent work and has not previously been submitted by me at another university. All materials used within this document have been acknowledged.



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Date

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ABSTRACT

Objective: The purpose of this study was to examine the dynamics of workplace violence (bullying, harassment & aggression), and the mediating roles of emotional intelligence and personality traits on mental health of mine workers in Northwest Province (NW), South Africa. The study also assessed the influence of selected demographic variables (ethnic group affiliation, economic status, educational level, job position, gender, and place of residence) on mental health of mine workers.

Method: The study used a cross-sectional quantitative survey design. One thousand five hundred and eighty three mine workers were purposively drawn from nine mine industries in Northwest province with age ranged from 19 to 62 years (median age = 35 years; SD = 9.48 years). Pearson Moment Correlation Coefficients, independent t-test, one-way ANOVA, and Structural Equation Modelling were used to test the stated hypotheses.

Results: The results revealed that workplace bullying was significantly and positively correlated with mental health ($r = .16$, $p < .01$), workplace harassment with mental health ($r = .26$, $p < .01$), conscientiousness with mental health ($r = .13$, $p < .01$), neuroticism with mental health ($r = .13$, $p < .01$), and age with mental health ($r = .19$, $p < .01$) respectively. Also, workplace aggression was significantly and negatively related with mental health ($r = -.12$, $p < .01$), emotional intelligence was significantly and negatively related with mental health ($r = -.31$, $p < .01$), openness to experience was significantly and negatively related with mental health ($r = -.07$, $p < .01$), extroversion was significantly and negatively related with mental health respectively. The results further indicated that workplace bullying was significantly and positively correlated with workplace harassment ($r = .83$, $p < .01$), and conscientiousness ($r = .18$, $p < .01$) respectively. In contrast, workplace bullying was significantly and negatively related with workplace aggression

(r = -.53, p < .01), emotional intelligence (r = -.07, p < .01), extroversion (r = -.08, p < .01), and age (r = -.07, p < .01), respectively.

The results also showed that workplace harassment was significantly and negatively correlated with workplace aggression (r = -.64, p < .01), emotional intelligence (r = -.14, p < .01), and extroversion (r = -.09, p < .01), respectively. Also, workplace harassment was significantly and positively related with conscientiousness (r =.08, p < .01). Workplace aggression was significantly and positively related with emotional intelligence (r = .06, p < .01) and extroversion (r = .06, p < .01), respectively. In contrast, workplace aggression was significantly and negatively correlated with conscientiousness (r = -.05, p < .01), respectively. Emotional intelligence was significantly and positively related with openness to experience (r = .47, p < .01), conscientiousness (r = .11, p < .01), extroversion (r = .43, p < .01), agreeableness (r = .43, p < .01), neuroticism (r = .18, p < .01), respectively. There was a significant negative relationship between emotional intelligence and age (r = -.12, p < .01).

Emotional intelligence significanty mediated the effect of workplace bullying on mental health (β = -.05, *p* <.001), conscientiousness significanty mediated the effect of workplace bullying on mental health (β = .05, *p* <.001), agreeableness significanty mediated the effect of workplace bullying on mental health (β = -.01, *p* <.001). Openness to experience did not significantly mediate the effect of workplace bullying on mental health (β = -.00, *p* = ns), extraversion did not significantly mediate the effect of workplace bullying on mental health (β = .01, *p* = ns), and neuroticism did not significantly mediate the effect of workplace bullying on mental health (β = -.00, *p* = ns). Emotional intelligence significantly mediated the effect of workplace harassment on mental health (β = .08, *p* <.001), conscientiousness significantly mediated the effect of workplace harassment on mental health (β = -.03, *p* <.001), and agreeableness significantly

mediated the effect of workplace harassment on mental health (β = .01, p <.001). Openness to experience did not significantly mediate the effect of workplace harassment on mental health on mental health (β = .00, p = ns), extraversion did not significantly mediate the effect of workplace harassment on mental health (β = .01, p = ns), and neuroticism did not significantly mediate the effect of workplace harassment on mental health (β = .01, p = ns). Emotional intelligence, openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism did not significantly mediate the effect of workplace bullying, workplace harassment and workplace aggression on mental health (β = .01, p = ns; β = .00, p = ns; β = .00, p = ns; β = -.00, p = ns; β = .00, p = ns; β = .00, p = ns).

Results further showed significant difference among ethnic group affiliation and mental health $F(2, 1580) = 6.167$, $p < .001$, with the mean score of the black miners and coloured mine workers significantly higher than the whites. The mental health of study participants were also significantly different based on their economic status $F(4, 1578) = 12.080$, $p < .001$. Also, educational level of the participants has significant influence on their mental health $F(4, 1578) = 26.181$, p <.001. In addition, job position of the mine workers has significant influence on their mental health $F(4, 1578) = 23.211$, $p < .001$. Furthermore, there was a significant gender differences in mental health of mineworkers $t(1581) = 4.12$, $p < .05$. Lastly, place of residence has a statistically significant influence on mental health of study participants $t(1581) = 4.12$, $p <$ .05.

Conclusion: Higher levels of workplace violence were significantly and adversely associated with higher frequency of poor mental health. The t outlined moderating variables namely; personality factors and emotional intelligence were also found to considerably mediate the relationship between the two main variables, workplace violence (bullying, harassment and

aggression) and mental health. The prevalence of workplace violence was either attenuated or in some cases prevented altogether when one or two of these variables were present. The same applies to the impact on mental health. Mining houses can benefit from implementing tailor-made training programmemes that would help both aggressors and victims of workplace violence. Further interventions with inclusion of more variables are recommended.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Mental health is defined by the World Health Organization (WHO, 2001, p.1) as, "a state of well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community". Indeed, mental health is an essential component of health as there can be no health without mental health. Mental health is attributable to a number of factors such as socio-economic, biological, and environmental factors. Workplace violence is among the environmental determinants of mental health. Einarsen, Hoel, Zapf, and Cooper (2011) stated that continued exposure to workplace violence may lead to chronic social, psychological, and psychosomatic problems in the victims.

In recent years mental health has been associated with workplace dynamics by various research studies which hypothesize that workplace psychosocial risk factors play a precursory role to poor mental health (Kuhn, 2013; OSHWiki, 2013; Leka & Jain, 2010; Nieuwenhuijsen, Bruinvels, & Frings-Dresen, 2010). This supposition has been reinforced by several studies such as Zoni and Lucchini (2012) who have associated work-related psychosocial risks with psychological and physical harm of employees; and Parent-Thirion, Macías, Hurley and Vermeylen (2007) who identified mental health problems associated with these factors as a significant occupational health issue. South African research studies (Cunniff & Mostert, 2012; Kennedy & Julie, 2013; Pietersen, 2007; Steinman, 2003; Meyer & Kirsten, 2014) are also indicative of the link between mental health and psychosocial risk factors such as workplace violence. This is a cause for

concern as employee mental health is a vital factor, not only for productivity and job performance purposes, but also for the reason that it poses negative health and safety implications for the workplace. This background, therefore, presents the necessary basis for the research of workplace violence in the context of employee mental health and the overall occupational health safety and both individual and organizational wellness.

Similar to many other countries globally, the Republic of South Africa (RSA) also experience a significant prevalence of mental health problems. In 2007, for instance, mental disorders ranked third in their contribution to the burden of disease (Bradshaw, Norman, Schneider, 2007), and approximately 1 in 6 South Africans were ranked likely to experience a common mental disorder (e.g. depression, anxiety or substance use disorder) during 2008 (Williams, Herman, Stein, Heeringa, & Jackson, 2008). Given the above, it is conceivable therefore that mental health issues will also manifest in the workplace. Whilst this is the case, predominant research has primarily focused on social, psychological, and biological factors as antecedents of mental health with little attention devoted to the association between workplace violence dynamics (bullying, harassment & aggression) and mental health including the roles of mediating variables. For instance, WHO (2010) and Pompili et al., (2008) have shown various factors that have a significant effect on mental health; however, these excluded workplace violence as a potential precursor. Nevertheless, exposure to workplace violence has been interrelated to the advancement of poor mental health in some studies. For instance, harassment, aggression, bullying and mobbing, all of which constitute workplace violence, have been identified by Canadian Centre for Occupational Health and Safety [CCOHS] (2012) as one of the psychosocial risk factors in the workplace that affect mental health. WHO (2010) also asserted that stressful work conditions, for instance workplace violence, may escalate to the development

of poor mental health, which in itself is a disruption of a person's thinking, feeling, mood and ability to relate to others (Lanuza, 2013). This, thus suggests that poor mental health may develop as a response to the occurrence of workplace violence as it will affect the general wellbeing and normal life of an individual and as a consequence, the individual maybe unable to lead a productive and, therefore, successful lifestyle.

Although there are ample studies on workplace and mental health in the literature, available studies in South Africa are mostly concentrated on the hospital workers. Also, studies have not examined the mechanism through which workplace violence may exert its effect on mental health through mediators. It is assumed in this study that emotional intelligence and personality will mediate the effect of workplace violence on mental health. Emotional intelligence is "the ability to perceive accurately, appraise, and express emotion; the ability to access and/or generate feelings when they facilitate thought; the ability to understand emotion and emotional knowledge; and the ability to regulate emotions to promote emotional and intellectual growth" (Mayer & Salovey, 1997, p. 10). This construct is gaining increasing attention among mental health professional due to its influence on mental health status (Extremera & Fernández-Berrocal, 2006). Emotional intelligence is all about regulating and managing moods and emotions. Violence in the workplace undoubtedly will elicit emotions and change of moods and how this is managed will have implications for mental health of those concerned. An individual that is high in emotional intelligence may be able to manage emotional reactions generated by violence in the workplace better compared to his counterpart with low emotional intelligence. Where this is the case, and other variables controlled for, individuals with high emotional intelligence may have better mental health even in an abusive work environment.

Mining has played a prominent role in South Africa, and thus shaped its socio-political, cultural and, substantially, its economic development (Smit, 2016). It is the driving force of the economic sector in the country as it steadfastly makes prominent contributions in terms of foreign exchange earnings, employment and economic activity (Chamber of Mines South Africa [COMSA], 2014). According to COMSA (2014), the mining sector has contributed over R2.4 trillion to the gross domestic product (GDP) and R2.4 trillion to export retributions, in real money terms, from 2004 to 2014. COMSA (2010) further states that 50% of foreign exchange earnings for the economic sector in South Africa stems from mining and, moreover, it generates substantial tax revenues as shown by its endowment of R11.3 billion in direct taxes and royalties to the treasury (COMSA, 2015). According to Smit (2016), about R330 billion of the annual income is derived from the mining sector as well as 20% of all investment in the country.

The rise of the South African economy to a prominent state, partly through mining however, came with sacrifices that were at the cost of human lives, specifically from the black population. According to Khan (2013), the development of an industrialized South Africa, specifically mining, was accomplished through the institutionalization of racial discrimination and using cheap marginalized black labour. Moodie (2005) also alludes to the fact that the South African state supported white supremacy which exploited blacks for production in the mines. According to him, exploitation as well as violence was perpetually used as a method to induce labour productivity.

Workplace violence, according to the National Institute for Occupational Safety and Health (2002 p.1) of the United States Department of Labour, was defined as "violence acts (including physical assaults and threats of assaults) directed towards persons at work or on duty". Di

Martino, Hoel, and Cooper (2003) defined workplace violence as "incidents where persons are abused, threatened or assaulted in circumstances related to their work, involving an explicit challenge to their safety, well-being and health". Workplace violence can range from ordinary threat of assault (psychological assaults such as yelling, name calling, mobbing, harassment.) to actual physical assault (such as hitting, kicking), and in the extreme cases homicide. Workplace violence can also come from within the organisation (internal) or from outside sources (external or public initiated) (Reemst & Fischer, 2016). Although various types and dimensions of workplace have been illustrated in the literature (LeBlanc & Kelloway, 2002; Barling, Dupré & Kelloway, 2009; Reemst & Fischer, 2016), in the context of this study, workplace violence is operationalized to have three dimensions of aggression, bullying and harassment.

Einarsen, Hoel, Zapf, and Cooper (2011) defined harassment, bullying and mobbing as, "the systematic exhibition of aggressive behaviour at work directed towards a subordinate, a co-worker, or even a superior, as well as the perception of being systematically exposed to such mistreatment while at work". Concerns over workplace violence (aggression, bullying and harassment) have been a global challenge. Workplace violence is reportedly very high worldwide with statistics showing 78% of employees having experienced it at some point in their career as reported by the International Labour Organisation (ILO, 1999). This trend prevails throughout the world (Society of Human Resources Management (SHRM, 2012). In the US, there is national concern over the spate of workplace violence. Duhart (2001) reported that an average of 1.7 million cases of workplace violence were committed annually between 1993 and 1999 in the US, and about 900 work-related homicides occurred annually. A review carried out by Di-Martino, Hoel, and Cooper (2003) on the trends of workplace violence in the UK,

Denmark, Finland, Sweden, Norway, Australia, Belgium, Germany, Ireland, and Netherlands shows that workplace violence is a global phenomenon.

It is reported that presently, only 24 countries globally have ratified the ILO Employment Injury Benefits Convention (No. 121) adopted in 1964 (Luchini & London, 2014; LaDou, 2003). Luchini and London (2014) further reported that less than 10% of employees in developing countries (South Africa inclusive) and 20% to 50% of workers in industrialized societies have access to adequate occupational services. This is in spite of the fact that South Africa is rated as the most organized and industrialized society in Africa. In her submission, Marais-Steinman (2003) described South Africa as highly traumatic for workers at all levels resulting from violence at the workplace. This, according to the author, has its root in the "Apartheid Wars". Being a founding member of the International Labour Organisation (ILO) and the first country in the world to codify labour legislation (Marais-Steinman, 2003), workplace violence such as bullying is not receiving adequate attention in South Africa. This partly led to the mineworkers' strike of 1922. Worst still, in the health sector, Steinman (2003) reported that 61.9% of all health care workers in South Africa experienced at least one incident of physical and psychological workplace violence such as bullying/mobbing, racial harassment, and sexual harassment in the past twelve months.

Generally, in RSA (Republic of South Africa) workplace violence can be traced to the historical background of the country (Loh, Restubog, & Zagenczyk, 2010). Historically, South Africa has been characterised by constitutionalized violence perpetuated by the apartheid government and according to Moodie (2005), dating back to 1913 this pervasive violence was also prevalent in the South African mines at least until the 1970s. During this time, underground violence was

such a standardized norm to the extent that it was eventually accepted as a fundamental part of the job by both the victims and the perpetrators. The influence of this historical background is further evident in the criminal patterns of the South African society as indicated by Breetzke (2010). Criminal trends in South Africa are symptomatic of the infiltration of violence, previously cultivated by the historical violent background of the country, in all aspects of the South African society (Centre for the Study of Violence and Reconciliation (CSVR, 2009); Shabangu, 2009; Govender, 2015).

Statistics indicate that interpersonal violent crimes that cause the most fear and trauma among the public have increased and, according to the Institute for Security Studies (ISS) (2013), these crimes are not easy to reduce through policing alone as most (around 60% to 70%) occur as a result of a mix of particular social and economic factors. On the basis of the above context, it is therefore expected that violence would permeate and be prevalent in other aspects of society as people seek to resolve social, economic, domestic problems and disputes which would, inevitably, infiltrate the workplace setting. The Rosebank police station fatal shooting of Captain Neelavathie Naidu and Lieutenant Colonel Thandi Mkhize on 1 August 2011 by a colleague who was undergoing a disciplinary process (Naidoo, 2016) and the 19 October 2007 shooting of four senior officials at Seshego Hospital in Polokwane (Maponya, 2008) are examples of this violence permeating the workplace in RSA.

There are as many definitions of personality as the numbers of theorists in personality psychology. Funder (2004, p. 5) defines personality as, "an individual's characteristic patterns of thought, emotion, and behaviour, together with the psychological mechanisms – hidden or not – behind those patterns". It has also been defined as "the organized, developing system within

the individual that represents the collective action of that individual's major psychological subsystems" (Mayer, 2007, p. 14). McCrae and Costa (1999) discussed human personality in terms of five components which are openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism. Generally, each of the dimensions has implications for behaviour and particularly for mental health and well-being. For example, an employee who is high in neuroticism may easily be bruised from workplace violence which also may affect his mental health. It is therefore assumed in this study that personality, defined as openness to experience, consciousness, extraversion, agreeableness, and neuroticism will mediate the effect of workplace violence on mental health among mineworkers.

The role of socio-demographic variables in a multifarious society like South Africa cannot be shut out in a study of this nature. South Africa is a multi-ethnic, multi-cultural society with eleven officially recognized ethnic groups and languages. Also, South African employees are clearly demarcated in terms of differences in economic status and educational levels which are generally seen as the aftermath of long years of apartheid rule. Gender difference in human population is a natural phenomenon and it signifies the cultural distinction between males and females. Schutte, Edwards and Milanzi (2012) had earlier reported that females do tend to face a higher level of physiological pressure than males with regard to mining work due to differences in their inherent physical labour capabilities. Dlamini (2016) argues that although academia emphasizes a cultural basis for sexual differences, physiology is the main cause of gender differentiation in the case of mining. For instance, due to their biological composition, to achieve efficiency levels equal to their male counterparts, females would have to utilize the maximum of

their strength resources. The disadvantage of this effort, however, is that it has negative implications for health and safety.

1.1.1 Historical context of the Mining Industry (Northwest)

Mining in South Africa can be traced back to the 1850s when the first profit-making copper mine was established at the Springbokfontein (Namaqualand, Northern Cape) farm in 1852 (Davenport, 2013). However, it was the 1860s that brought forth the historical mining revolution (Borsa, Chmielewski, Głogowska, & Wrana, 2014) when the 21¼ carat Eureka diamond was discovered in late 1866 and then the 83½ carat Star of South Africa which was also discovered in 1869 in the Northern Cape at the Vaal River and Kimberley areas. Historically, Kimberley is one of the most legendary mines in South Africa as it harbours the famous Big Hole. According to De Beers (2016), mining was launched at the site in 1871 and operations continued for 43 years until 1914. In 2002 the site was transformed into a tourist attraction with a R50 million invest from De Beers.

Since the era of the Springbokfontein find, several other remarkable historical discoveries were made in South Africa. For instance, the first gold was discovered in the farm Eersteling near Polokwane in the then Transvaal in 1870 and mining started in 1874 (Pearton & Rand, 2007; Wiener, 2009), then came the discovery of the gold reefs of the Witwatersrand in 1886 (Moodie, 2005; Cripps, 2012) and the discovery of The North West came to play a role in mining when it was found to have a vast iron-ore resource when the Merensky Reef was discovered in the 1920s (Manson, 2013) and thus leading to the expedition of the growth of a secondary industry of the country. The North West province, however, is rather more famous for the precious metal, Platinum, which was discovered on Bafokeng territory in 1924 (Mbenga and Manson 2010). In

the 1970s the metal significantly thrived (Cairncross, Kisting, Liefferink, van Wyk, 2013), and it is currently South Africa's prize mining sector. Probably due to this growth, South Africa, according to Smit (2016), is gradually shifting towards a tertiary economy with up to 65% of GDP stemming from the mining sector.

Historically, colonial racial oppression in South Africa was established in 1910 by the Union of South Africa, however, it was the National Party that legitimized racial domination and White supremacy in 1948 (Centre for the Study of Violence and Reconciliation (CSVR, 2009). It is widely documented that the mining industry laid the foundation for apartheid laws and practices. For instance, Harington, McGlashan and Chelkowska (2004) show that politics of segregation was central to work conditions in the mines. According to these scholars, colour based barriers were erected to impede any prospects for men to advance their skills. Measures and policies of racial segregation through which a societal and labour market hierarchy, based on race and gender, were established as per state decree (Motsei & Nkomo, 2016). These regulations, at the behest of the mining industry, also ensured that black men were forced to seek work in the mines, leaving their families in the then homelands.

Apartheid laws constructed colossal discriminations amongst the South African population (Mohautse, 2014) through guarantying that white males enjoyed absolute authority politically, economically, and socially whilst other races and females were rendered inferior (Cotula, 2006; Carrim, 2006). This type of laws enabled mine owners to pay black workers low wages (Lowenberg, 2014). Black labourers were also barred from obtaining mine trade education to prevent them from being on an equal vocational and educational platform with their white counterparts (Jain, Sloane & Horwitz, 2015). The subjugation of black workers was achieved

through the Mines and Works Act of 1911 and its amendment in 1926. The legacy of apartheid, which was characterized by ruthlessness and underlined by violence, is relevant to understanding the history of mining in South Africa. Kynoch (2006) alludes to the fact that the mining industry was a volatile and perpetually dehumanizing environment which subsequently influenced patterns of violence in other societal areas. Under the rule of apartheid, violence was used and accepted in underground mining during the twentieth century and white supervisors were given total authority over black labourers (Moodie, 2005), and inflicting physical pain was considered an imperative and necessary instructional tool.

According to Moodie (2005) and Phakathi (2010), violence was a favoured form of labour control in the South African gold mines and was used as an incentive for performance and as a punitive method for what was perceived as misbehaviour on the job. Indeed black labourers were even indoctrinated into expecting and accepting whippings underground. Moodie (2005) states that the early years of gold mining characteristically initiated blacks into the rigours of underground mining by violent assault. Kekana (2015), a black miner who worked underground in the era of apartheid, explains that not only were the black workers abused physically but they also suffered a series of psychological abuse as well. In his book titled "Underground Undermined: What Really Happened in South African Mines during Apartheid", he says that white Afrikaners would insult black workers by calling them "Kaffir" because they knew that, to a black man, that was the worst insult ever. According to Kekana (2015), most black workers carried that insult for a long time to an extent that it affected their complex for a lifetime.

Another element of mining during the apartheid era is the infamous violent gangs that operated in areas surrounding South Africa mines. During apartheid, State Police only controlled township

criminal activities which posed a threat to the government and white residential areas. As for other criminal activities, blacks were largely left to fend for themselves. This care less about the black townships" attitude by the apartheid state enabled organized violent groups to thrive with their criminal activities without fear of being punished by the law. First, it was the Marashea gang which was formed in the 1940s (Kynoch, 2006), then "Tsotsis" followed in the 1950s (Abrahams, 2010). From there forth various gangs sprouted. According to Abrahams (2010), migrant workers were perceived to be uneducated about city life making them vulnerable to the criminal activities of these gangs. This caused friction between the workers and the gangs which resulted in more violence. These gangs thrived in their criminal and violent escapades, which, according to Kynoch (2006), is the foundation of the violent crime epidemic that still plagues South Africa today. So, mine workers were subjected to beatings by their white supervisors underground and faced further violence as well on the streets and in their homes. This really marked a rough era in mining.

Migrant labour is another legacy of the apartheid era that led to the rise in South African mining. According to Kynoch (2006), industrialization, such as the Witwatersrand for instance, was achieved on the back of a colossal migrant labour nexus. Abrahams (2010) states that by 1920, an estimated 200,000 African migrant workers had trekked to Johannesburg in search of the success that was associated with mining. As the story of the discovery of minerals in South Africa spread, immigrants from neighbouring countries such as Malawi, Mozambique, Lesotho and Zimbabwe flocked the country (Maja & Nakanyane, 2007).

The outsourcing of mining labour from the neighbouring foreign states dates back to 1912 when the Native Recruiting Corporation (NRC) was established (Rabe, 2006) by the Chamber of

Mines (Glover, 2015). It was, however, the apartheid government which fuelled migrants labour practices when it established new laws and measures that were aimed at ensuring artificial unemployment and job mobility restriction amongst blacks (Maja & Nakanyane, 2007). Through these measures, the government successfully created a labour cradle from neighbouring countries that they could easily exploit. They created a single industry-financed recruitment system, the Employment Bureau of Africa (TEBA), which was a merger of the NRC and the Witwatersrand Native Labour Association (WNLA, popularly 'Wenela') (Harington, McGlashan & Chelkowska, 2004; Latsky, 2008) and which operated an extensive network of recruiting offices in the supplier states (Maja & Nakanyane, 2007). The migrants were offered a contract that only benefitted the mine owners while disempowering the migrants. For instance, the contracts were short-term (Harington, McGlashan and Chelkowska, 2004) and at the end of the contract migrants had to return to their country of origin from where they would start the process of renewing their work contract. Furthermore, if the migrant workers contracted any diseases or became disabled (a common occurrence), they would be extradited back to their home countries (Maja & Nakanyane, 2007).

According to Harington, McGlashan and Chelkowska (2004), from 1989 to 1996 an average of 60% of the total labour force was comprised of migrant labourers. The labourers were recruited from their countries and the South African homelands and, due to the apartheid racial laws, were provided with ethnically ghettoized accommodation in compounds and 18-month long contracts with no job security (Harington, 2004; Rabe, 2006; Bezuidenhout & Buhlungu, 2010; Botes, 2013).

1.1.2. The Mining Industry post 1994

The economic, political and social crisis and the subsequent collapse of apartheid heralded an era of democracy which led to profound changes in all elements of society in South Africa. The most significant changes were largely noted on the political platform and this, subsequently, led to profound changes in workplace dynamics (Buhlungu & Webster, 2005; Booysen, 2013). These subsequent changes in the workplace came about as a result of the role played by the trade unions, specifically in the mining industry, during the political struggle for freedom (Henson, 1976; Bhorat, Naidoo & Yu, 2014). History (Ludwig, 2006; Ndlozi, 2010; Maree, 2012; Twala & Kompi, 2012) shows that trade unions made a significant impact for the democratization of South Africa by pursuing the fair treatment of all employees, specifically black workers, and therefore ushering in the dawn of equality in the workplace and the extended society in general.

Although democracy was ultimately achieved and all racial segregation finally abolished, theconsequences that resulted from the system of apartheid are still apparent today (van der Berg, 2007; Schensul & Heller, 2011; Westaway, 2011). Agreeably, it was indicated by the CSVR (2008) that South Africa is one of the most unequal societies in the world and this inequality is an artefact of apartheid. As a result, racial divides regarding poverty, joblessness, and social and political exclusion, and ostracism still exist years after the democratization of the country. According to Mashilo (2010), this inequality is mirrored in the white top and black bottom employment hierarchy that is apparent in the South African job market. Against this background, it is clear that the racially constructed system founded under apartheid still remains

intact and operational and, as alluded to by Duncan (2013), the legalization of apartheid may have ended but its agenda is still effective.

1.1.3. Health Matters in Mining

The mining industry is a working climate that is strongly associated with high stress levels due to the nature of the work (Masia & Pienaar, 2011; Schutte, Edwards & Milanzi, 2012; Garrido & Hunt, 2013). Mining in South Africa remains characterized by precarious occupations and harsh working conditions (Le Roux, 2005; Paul & Maiti, 2005; Botha, 2015; Smit, De Beer & Pienaar, 2016). Long-term experience of high levels of physical job demands can result in workplace stress and also in harmful physical and emotional responses that occur when the psychological and/or physiological requirements of the job do not match the capabilities or needs of the worker. The environmental conditions and the physical demands of mining operations, suggest that mine workers are likely to develop stress and/or stress related conditions (Cordial, Riding-Malon & Lips, 2012; Schutte, Edwards & Milanzi, 2012; Mauryaa, Karenab, Vardhana, Arunaa, Raj, 2015). Apart from the physical demands of the job, mine workers are also psychologically taxed when job demands are high and job decision autonomy is low (Rothmann & Joubert, 2007; van der Walt, 2008; Nieuwenhuijsen, Bruinvels, Frings-Dresen, 2010; Edwards, 2012).

Masia and Pienaar (2011) have also stated that job insecurity is a major concern in the miningindustry. According to Smit, De Beer and Pienaar (2016) many employees face a challenge of restructuring and organisational downsizing, and as a result, this constant threat to the continuity and stability of employment becomes detrimental to their psychological and physical health (Richter, 2011; Fatimah, Noraishah, Nasir & Khairuddin, 2012; Kekesi & Agyemang, 2014; Nella, Panagopoulou, Galanis, Montgomery, & Benos, 2015).

Shift working is another one of the mining aspects that can also impact the health of mine workers. The risk factor for shift working is that it interferes with the biological quotidian cadences and sleep/wake system which often leads to various problems such as psychosomatic difficulties and disorders, decline of competence, and ultimately work/life balance (Åkerstedt & Wright 2009; Costa, 2010; Lerman et al., 2012; McHill et al., 2014; Magee et al., 2016). The circadian misalignment may lead to impairment of neurobehavioural performance as the duration of sleep is less than required. For instance, when an individual's duration of sleep is less and the quality is therefore poor, that person is more likely to be less vigilant and thus to make mistake which can be fatal. The mining industry is highly associated with shift work due to its highly competitive driven nature. Regrettably this has been shown to have detrimental outcomes for employees` mental and physical health and subsequently their overall wellbeing including their personal and family life balance.

The mining industry has been a major source of livelihood for many and a significant part of economic growth in South Africa for many years, and it is for this reason that the industry needs to develop sustainable proactive and responsive ways to address the issue of employee health and wellness as associated with this sector. If left unattended to, matters will escalate to a level where the will for production will be lost and unrecoverable.

1.1.4. Workplace violence and the Mining Industry

Although mining is renowned for its positive effect to the economy of South Africa and a critical sector worldwide, scholars such as Singer and Tal-Singer (2002), and Wynn (2001) indicate that, due to the nature of the job, it is at the same time one of the most hazardous environments to work in. This is supported by Stewart, McDonald, Hunt, and Parker (2008)'s report which states

that the mining industry is among the top ten industries nationwide with high occupational injury and fatality rates, and Donoghue (2004) who described mining occupation as being arduous. According to Singer and Tal-Singer (2002), and Wynn (2001), work in a mine is challenging and as alluded to by Oldfield and Mostert (2007) the job demands of such a working environment consequently has health and wellness inferences for workers, which can have negative psychological and somatic outcomes. Although occupational health and safety is of the foremost importance in the mining sector, the focus so far has been on the typical fundamentals such as the physical, chemical, biological and ergonomic risk factors and seldom on other equally important aspects such as the psychological hazards of the environment.

Until recently, occupational health psychology (i.e. Employee Assistance Programmemes) has generally been overlooked or rather perceived as an inconsequential investment "a nice-to-have" within the labour market in South Africa (e.g. Matlhape, 2003; The Public Service Commission [PSC], 2006; Orren &Terblanche, 2009). Whilst the mining industry, specifically the COMSA of South Africa, was instrumental in the development of employee wellness programmemes in South Africa, initiated in 1983 (Terblanche, 1992), the emphasis was mainly on the above outlined aspects, i.e. physical, ergonomics factors etc., with little consideration given to the management of mental health of employees. Additionally, traditional methods used in these programmemes were based on a reactionary approach rather than a precautionary one. As a result of this oversight, one of the major psychosocial risks that were disregarded is the incidence of workplace violence and its impact on employee mental health.

As a result of the above, this study focuses on mental health as a consequence of workplace violence as there seems to be unanimity of a substantial association between workplace violence

and mental health in general. In allusion to this association, Farrell and GeistMartin (2005) stated that stress is the most predominant health problem associated with workplace bullying. Similarly, Kamchuchat, Chongsuvivatwong, Oncheunjit, Wing Yip, and Sangthong (2008) found that psychological consequences (e.g. stress, depression, anxiety etc.) were a foremost concern regarding workplace violence among nurses.

Thus far, scientific research has increasingly deferred to the hypothesis that work settings that are characterized by harmful or unhealthy psychosocial conducts, undeniably, have a profound bearing on the mental health of individuals. These studies (e.g. Bowling & Beehr, 2006; Hansen et al., 2006; Hogh, Mikkelsen, and Hansen, 2011) have shown the significant causal effect of workplace violence on mental health, which subsequently instigates the breakdown of organizational wellness as well. Consequently, these mental health problems, associated with workplace violence become a significant occupational health problem as indicated by Commission of Social Determinants of Health [CSDH], 2008) and according to WHO (2010), they are, as a result, a leading cause of various work-related negative outcomes in the workplace. This, thus, informs the aspiration for this study to explore workplace violence as an organizational factor that contributes to poor mental health.

The fundamental purpose of this study was to investigate the dynamics (bullying, harassment & aggression) of workplace violence amongst employees in the mining industry of the Northwest Province (NW) in South Africa, and the mediating roles of emotional intelligence and personality in this association. It is particularly crucial to do so specifically in this setting as the mining industry`s substantial contribution to, not only the Northwest province`s, but to the gross

domestic product (GDP) of South Africa remains the quintessence of the overall economic activity in the country.

1.2 Statement of the Problem

The South African mining industry is considered to be a notable source of employment in the country (Musingwini, Cruise and Phillips, 2013). The mining industry employs 12% of the workforce directly and as much as one third inclusive of associated industries. The Mining Qualifications Authority (MQA, 2011) reported that in 2009 the mining sector employed directly about 548 000 workers. In the past decade, it has contributed just over R2.4 trillion to the country's GDP and R2.4 trillion to the country's export earnings, in real money terms (Chamber of Mines (COM), 2014). According to Statistics South Africa (Stats SA, 2012), the majority of this industry is predominantly in the Northwest (NW) province which produces 70% of the world's platinum as well as the third largest provincial output of gold, at 139,2 tons (24% of the total) (Truth and Reconciliation Commission of South Africa, TRCS, 2013). Mining is one of the key sectors in the province and is comprised of 168, 430 employees who make up 33% (the largest) of the country's mining sector employment (Department of Mineral Resources (DMR), 2010; Mining Qualifications Authority (MQA), 2014), thus the choice of the current study to examine workplace violence in this research setting/province amongst several in this industry as it makes for representative sampling. Since the NW province mining industry forms the largest contributor to the RSA economic development, it is important to scrutinize the pertinent risk factors such as workplace violence which can consequently lead to the development of poor mental health, and can therefore destabilize the optimal functioning of this industry.

The undeniable crucial role of mining in the South African economic development was exhibited by the infamous 2012 labour unrests (e.g. Twala, 2012; Yager, Soto-Viruet, & Barry, 2012; Smith, 2012; Antin, 2013) which were widespread throughout the country but most noticeably in the Northwest province where the Lonmin mining strike escalated into one of the most violent mining strikes in the history of South Africa. The incident tragically ended with 78 mineworkers being injured, whilst 34 were shot dead after the clash with the police (Marinovich, 2012), hence it was appropriately named the Marikana Massacre. Following the incident, the South African rand was dealt a huge blow as it significantly decreased against the US Dollar (Bexter, 2013). According to Gwatidzo and Benhura (2013) the country's rating as a foreign direct investment destination was also considerably affected. By October 2012 the net equity market outflows were at R5.6 billion ($643 million) ("Cry, the beloved country: South Africa's Sad Decline", 2012) supporting Gwatidzo and Benhura's (2013) and Gill Marcus's (Governor of the Reserve Bank) view that investors had lost confidence

n the country as a credible investment target. As a result of the Marikana catastrophe, the total market value of major mining companies decreased by five percent; and the mining sector is reported to have lost an estimate amount of about R15 billion in sales and production (PriceWaterhouseCoopers, 2012; Bexter, 2013)

Another noteworthy South African mining labour strike that affected the country's economy was the 2014 platinum sector's strike which emanated from the major platinum stakeholders' disagreement with the Association of Mineworkers and Construction Union (AMCU)'s terms concerning wages and conditions of service during their employee remuneration negotiations (Bohlmann, Dixon, Rimmer, and Van Heerden, 2014). The strike, which was the costliest to

have ever been experienced in the country, lasted for five months resulting in the forfeiture of approximately R23 billion revenue and lost employees' earnings of R10.7 billion. The economic penalties of this strike were evidenced when the South African real gross domestic product (GDP) growth projection plummeted from a 2.7 % to a low of 1.4% between the period prior and after the strike (e.g. Treasury, 2014; International Monetary Fund (IMF), 2014). The impact of the labour unrests was also extended to other sectors such as the transport, automotive and agricultural trades etc. (Kumo, Rieländer & Omilola, 2014) where several services and deliveries were disrupted, symbolising the undulating effects of the mining sector's events on the overall economy.

The events that took place in the mining sector for the past five years are symbolic of excavating workplace tensions which ultimately result in violence and stoppages, and ultimately mental health issues. Poor mental health, as shown earlier in the current study, can have adverse outcomes for organizational wellness resulting in low productivity and job performance. An indispensable industry such as the mining sector cannot afford to have unproductive employees due to ill health, triggered by workplace violence, as this not only has considerable financial implications for the industry, but also, directly and indirectly, encumbers the economic pivot of the country and thus the society at large.

Employee mental health is a vital factor, not only for productivity and job performance purposes, but also for the reason that it poses health and safety implications for the workplace. The study conducted by Public Service Alliance of Canada (PSAC, 2012) suggests that when the state of mental health is disrupted by factors such as psychologically unhealthy workplaces, productivity and morale are subsequently affected, and as a result additional stressors in the workplace

become intensified. As previously alluded to, preliminary review on this research project has revealed a dearth in knowledge and strategies that explore the relationship between employee mental health and workplace violence in the mining industry within the country.

The data and approaches that are available in the South African literature with regard to the causal relationship that exists between workplace violence and mental health (e.g., Pietersen, 2007; Steinman, 2003; Van der Spuy, Röntsh, & Marais, 2000), primarily explored the dynamics of workplace violence as occurring in emergency and/or customer/client services sector/settings i.e., hospitals, prisons, etc., with the exclusion of other pertinent sectors such as the mining industry. This is a cause for concern as the mining industry, which accounts for approximately one third of the gross domestic product (GDP), and 50% of foreign exchange earnings (The Department of Transport Roads and Community Safety, 2013), is the epitome of the South African economy. Also, previous studies have not examined the mechanisms through which workplace violence exerts its effects mental health through other relevant variables as could be seen in this study. It is for this reason that this study examined the mediating effect of gender, emotional intelligence and personality in the link between workplace violence and mental health of mine workers in a bid for the preservation of a significant industry, the mining sector, for the advancement of the country.

1.3 Purpose of the Study

The fundamental purpose of this study was to investigate the links among the dynamics of workplace violence (bullying, harassment and aggression) and mental health of mine workers in Northwest province, and to examine the mediating roles of emotional intelligence and personality in this association.

1.4 Objectives of the Study

In order to achieve the overarching objective of the study, the following specific objectives were proposed:

1. To empirically understand and document the relationship between workplace violence factors (aggression, bullying and harassment), EI, personality factors and mental health.
2. To investigate whether EI will mediate between workplace violence factors (aggression, bullying and harassment) and mental health dimensions.
3. To assess whether personality types will mediate between workplace violence factors (aggression, bullying and harassment) factors and mental health dimensions.
4. The determine the influence of demographic factors such as gender, educational level of miners, ethnicity, job position of miners on mental health

1.4 Scope of the Study

This study was limited in scope to Northwest province of South Africa. Northwest Province is one of the key regions that have hugely been advantaged by their deposits of some of the major minerals in the world. The North West Province is a large producer of platinum group metals and gold, and has a mining output of R74 billion (Ngcofe & Cole, 2014; Makgetla & Levin, 2016). It is the predominant mineral producing province in South Africa. Its contribution is at 94% of South Africa's platinum, 46% of the granite and 25% of the gold produced in the country (North West Development Corporation (NWDC), 2015). According to the South African Government (SAG, 2016), the platinum produced in Rustenburg and Brits districts, both in North West province, is more than any other single area in the world. Subsequently, mining is the pivotal of the economy in the province with a contribution of more than 50% of the gross domestic product (GDP) (NWDC, 2015). The province's mineral trove extends to platinum, mined at Rustenburg and Brits; diamonds, mined at Lichtenburg, Christiana, and Bloemhof; marble and granite mined

in Rustenburg; fluorspar exploited in Zeerust (Gresse, 2003; Government Communication and Information System (GCIS) 2010; van Wyk, 2012).

1.6 Significance of the Study

Three broad areas form the basis of the significant contribution of this study namely: theoretical significance, methodological significance, and practical significance.

1.6.1 Theoretical significance

Several South African studies (Cunniff & Mostert, 2012; Kennedy & Julie, 2013; Meyer & Kirsten, 2014; Pietersen, 2007; Steinman, 2003) have conducted research on workplace violence; however, the body of research that is specific to the context of the mining industry is rare. The majority of available literature on workplace violence is mainly focused on emergency, health or client orientated work settings, but most predominantly on the health sector. Due to the current research being industry specific, the mining sector has thus been overlooked so far.

Current research on workplace violence in the mining industry has also neglected psychosocial factors of personal attributes such as gender, personality, emotional intelligence and their collective moderating effect on the relationship between mental health and workplace violence. The emphasis is rather on the prevalence of workplace violence (e.g. Moodie, 2005; Visagie, Havenga, Linde, Herman & Botha, 2012) and gender related workplace psychosocial risks such as sexual harassment. Hence the aspiration of this study to fill this theoretical gap by showing the association of these factors in accordance with workplace violence and mental health.

Although the South African literature mainstream has showed an association between workplace violence and mental health, the precursory nature of this association has not been thoroughly

explored. This study examines this relationship in depth and this will lead to the enhancement of the theoretical understanding of the development of mental health solely emanating from workplace violence.

Of noteworthy, also, is that the three components, bullying, harassment, and aggression, of workplace violence are always studied in isolation and not in uniform. The theoretical model of this study addresses this through profiling workplace violence comprehensively by including all three components in the study hypothesis. This study is the first of its kind in the South African mining industry to explore these three components of workplace violence in this fashion and thus add to the body of the existing literature in South Africa.

Overall, the theoretical significance of this study lies in the fact that its content and conclusions will address the substantial dearth in theoretical scientific research of the relationship between workplace violence and mental health; it will also help guide practices, educational interventions, policies, employee and organizational wellness practices in the South African mining industry. The study will also create a foundation for other avenues of research for potential researchers in this field. Therefore this study contributes to the current theoretical and methodological knowledge of the field of workplace violence and mental health of employees.

1.6.2 Methodological significance

The significant contribution of this study to methodological knowledge is based on measuring the effect of the outlined moderating variables (gender, personality and EQ) of workplace violence on mental health. Thus far in the South African mining industry, previous studies have not fully recognized the moderating effect of these psychosocial factors in relation to the

association between workplace violence and mental health of employees. This study will, therefore, shed light on a new perspective of the current methodological knowledge.

Several South African studies have explored workplace violence using different instruments for testing violence. However, none have made use of the Work Harassment Scale (WHS), Aggressive Experiences Scale (AES), and the Negative Acts Questionnaire Revised (NAQ-R) Scales as a collective. Therefore, by utilizing these scales in conjunction, the study will augment current scientific methodological knowledge in this research field as this may lead to the development of better methodological models for future studies of this kind.

Fundamentally, this study endeavours to supplement the dearth in the methodical knowledge that is undeniable in this kind of research. It forms the groundwork that will stimulate new ideas and equip potential researchers with the basic methodological approaches required to undertake such research work. It is therefore beneficial to the body of methodological knowledge.

1.6.3 Practical significance

Gunaydin and Kutlu (2012), Meyer (2011), Steinman (2010) and several other researchers have alluded to the fact that workplace violence is on the increase in South Africa and given that the mining industry has been typically characterised by this phenomenon for more than a decade (Moodie, 2005), it is empirical, thus, for scientists to seek to advance research of workplace violence that will yield mitigating processes, particularly in a significant industry such as the mining sector. Contributing to this development of the revised mitigating processes regarding workplace violence is one of the aims this study aspires to fulfil.

In practical terms, the study of the relationship between workplace violence and employee mental health can yield beneficial profit for the following purposes:

- The new knowledge can lead to the advancement of employee relations policies
- Improve the programmemes of employee health and wellness in organizations
- Enhance occupational health and safety policies, training and standards
- Supplement scholarly research
- Lead to the development of appropriate interventional methods
- Inform practices of the management of absenteeism
- Guide policies and training on mental health in the workplace
- Guide policies, protocol and training of labour relations practices in regards to workplace violence.

All the above listed benefits will directly and indirectly assist organizations to improve productivity, job performance and most importantly to maintain the health and wellness of employees and that of the organizations. Furthermore, the study would expectedly heighten the awareness of workplace violence and mental health issues in mining which can be strategically used as a pre-emptive approach for reduction and prevention of this problem in organizations.

1.7 Operational Definitions of Terms

1.7.1 Workplace violence

Workplace violence is defined as single or cumulative incidents where employee(s) are physically assaulted or attacked; emotionally abused; pressurised; harassed or threatened (overtly, covertly, directly, indirectly) in work-related circumstances including bullying, harassment and aggression.

1.7.2 Workplace Bullying.

Workplace bullying is repeated, unreasonable actions (direct or indirect, whether verbal, physical or psychological) of individuals (or a group) directed towards an employee (or a group of employees), which interfere with work, and are intended to intimidate, degrade, humiliate, or undermine; or which create a risk to the health or safety of the employee(s). It is measured by the Negative Acts Questionnaire Revised (NAQ-R) developed by Einarsen and Raknes (1997).

1.7.3 Workplace Harassment

Harassment is verbal or physical conduct that denigrates or shows hostility or aversion toward an individual because of his/her race, colour, religion, gender, national origin, age, or disability, or that of his/her relatives, friends, or associates, and that (i) has the purpose or the effect of creating an intimidating, hostile, or offensive work environment; (ii) has the purpose or effect of unreasonably interfering with an individual's work performance; or (iii) otherwise adversely affects an individual's employment opportunities. To be measured with a workplace harassment scale (WHS) where a high score is indicative of high experience of harassment and vice versa. It was measured by the Aggressive Experiences Scale (AES).

1.7.4 Workplace aggression

Any act of aggression, physical assault, threatening or coercive behaviour that causes physical or emotional harm in a work setting. This is determined by the score on the workplace aggression scale developed by researchers from the State University of New York in New Paltz (quoted in the New York Times, 25th March, 2008) where a high score is indicative of high experience of aggression and vice versa.

1.7.5 Mental health

Mental health is defined as the successful performance of mental function, resulting in productive activities, fulfilling relationships with other people, and the ability to adapt to change and to cope with adversity. This is determined by the General Health Questionnaire - GHQ28

1.7.6 Gender

This refers to attitudes, feelings, and behaviours that are culturally associated with a person's biological sex.

1.7.7 Personality

Is the set of psychological traits and mechanisms within the individual that are organized and relatively enduring and that influence his or her interactions with, and adaptations to, the intrapsychic, physical, and social environments. It is measured using the Big Five Inventory 10 scale (BFI-10)

1.7.8 Emotional Intelligence

Emotional intelligence is the ability to perceive, express and understand emotions and to be able to regulate them in ourselves and in others. It is measured by the model of EQ as developed by Schutte et al (1998).

1.7.9 Employee health and wellness Programmeme

Employee health and wellness programmemes are intervention strategies intended to promote the well-being of employees. They could be curative and preventative in nature, the purpose of which is to create an awareness of health and wellness issues; to facilitate personal and behavioural change and health management; and to promote a healthy and supportive workplace.

CHAPTER TWO

THEORETICAL FORMULATIONS AND PERSPECTIVES

2.1. **Theoretical Framework**

There are a number of theories that can be used to explain the concepts of workplace violence and mental health. The theoretical framework for this study is based on the theoretical basis of workplace bullying for the fact that its evolution process is similar to that of harassment and aggression. Furthermore, the workplace bullying model is widely accepted by numerous researchers, e.g. Brownell and Powelle (2013); Einarsen, Hoel, Zapf and Cooper, (2003); Kalamdien (2013); Salin (2003). The most relevant theoretical models for this study are the Moayed, Daraiseh, Shell and Salem's (2006) and the Johnson's (2011) models of workplace bullying. Furthermore various theories to explain workplace violence, mental health and the various variables encompassed in this study are also included.

2.1.1 Theories on Mental Health

The concept of mental health is in nature very subjective and this may render the precise conceptualization of this phenomenon challenging. Various factors such as the cultural and spiritual aspects have to be taken into cognisance meaning that the notion of a common universal classification of mental health is almost unfeasible. Subsequently, different schools of thought, in their bid to explain the underlying stimuli of mental health, inevitably differ in their theoretical elucidations of the concept. However, even though variations on the hypotheses of mental health do exist, one critical defining feature which is common to all of them is the emphasis on the component of human strength. Almost all disciplines place value on positive quality of life aspects instead of the absence of those that are negative.

Flanagan, Hartnoll and Murray (2009) outlined two approaches to mental health which are behaviourist and cognitive.

2.1.1.1. **Behaviourism**

Behaviourism was first revolutionised by Watson's and Rayn studies of conditioning in 1920 (Widiger & Trully, 2007). The hypothesis for the behaviourist approach is that the environment plays a precursory role in the development of mental health and that the behaviour is learned. It is founded on the view that human behaviour is circumstantial and it is therefore influenced by the mutual interactions that occur between the individual and climate of the individual's habitat. The theory suggests that all maladaptive behaviour i.e. poor mental health primarily emanates from the individual's environment. In view of this, poor mental health will, therefore, emanate from elongated exposure to negative behaviours that violate the individual such as in a case of workplace violence. Based on the premise of the behaviourists, a victim of workplace violence will, accordingly, also exhibit psychological maladaptive patterns of behaviour as a learned response to being constantly subjected to negative behaviour in their work space. With the intensity of the response gradually increasing, the chances of coming into contact with the perpetrator are also increased.

This theory operates on the dogmatic basis of environmental influence as well as other social related factors; however, this course overlooks the role of psychological influences like personality and Emotional Intelligence, the cognition of the individual and several other psychosocial factors which may moderate the effect of workplace violence on mental health. In this regard, other avenues for investigating other possibilities for the causes of mental health are

habitually disqualified. Furthermore, human behaviour is explored in the confinements of a meticulous laboratory setting instead of the human natural habitat where behaviour actually occurs. By the same token, McLeod (2007) also states that this approach is useful in experiments where behaviour can be observed and manipulated. Moreover, there is no enlightenment as to the justification for behaviour that the human species exhibits that cannot be traced to their environment. This is an indication that mental health is determined by more than just a modest interaction between an individual and their social habitat but it also includes a complexity of various factors including the existence of internal cognitive makeup that actually plays a role in the complexity of human behaviour and, for that reason, mental health. Although this theory has limitations, it is, however, useful for the explanation of environmental events such as workplace violence that might affect mental health.

2.1.1.2. **Cognitive approach**

The second approach, cognitive approach, used in the explanation of mental health is an approach that is also used to supplement the shortcomings of the behaviourist approach. This approach was propounded by scholars such as Alfred Adler and Albert Ellis who are two of the first therapists to consider cognitive functioning in psychotherapy and subsequently primarily developed cognitive-based approaches to therapy (Mosak & Maniacci, 2008). The cognitive approach's basic philosophy underlying this approach is that behaviour is determined by mental processes through which information is processed in the brain (Sánchez, Carballo & Gutiérrez, 2011). In view of this, the suggestion is that mental health is dependent on the way in which the incident of workplace violence is perceived or rather processed, and not necessarily on the actual experience of the incident. The cognitive approach acknowledges that behaviour (mental health)

is a result of a series of responses to external stimuli (workplace violence) as the behavioural theorist suggests, however, it further augments this by advancing that there are also cognitive internal processes that are supplementary to the interaction of the individual and the environment as seen in Mitchell, Busenitz, Lant, McDougall, Morse and Smith (2002).

The short-fall of this theory is that, although it is irrefutable that cognitive processes may significantly influence behaviour and thus the manifestation of mental health, the approach downplays how the severity of an experience can impact on mental health and how individual differences can serve as either a buffer or a vulnerability to the development of poor mental health. For instance, a prolonged experience of workplace violence may result in the development of an anxiety disorder regardless of how the individual processes the incident.

To address the limitations of these approaches, the two were merged to form a single cognitive behavioural approach (Trull, 2007). Basically, this approach is rooted in the fundamental belief that thoughts, behaviours, and feelings work interchangeably to influence mental health. The approach submits that it is an individual's defective perceptions about others, the society and the self that result in poor mental health (McLeod, 2008). It suggests that if an individual can interpret (cognitive processing) about the events (external stimuli) occurring in their society through their interaction with that society, the individual may become emotionally and behaviourally disturbed (Field, Beeson & Jones, 2015; Sánchez, Carballo & Gutiérrez, 2011).

The relevance of these amalgamated theories to the current study is that it provides a broad range of significant ideologies that attempt to explain mental health. Furthermore, based on this approach, workplace violence (stimuli) can be examined as the interaction between the

individual and the environment; and depending on how the victimized employee interprets (cognitive processing) the incident, development of maladaptive behaviour and distorted thinking may occur resulting in one or the other of various psychological disorders i.e. anxiety, depression, PTSD etc. and consequently the health and wellness of the employee.

2.1.2 Conservation of Resources Theory (COR)

In circumstances of trauma, individuals may exhibit commonalities in their response to the event, however, in other cases the trauma may not lead to the same emotional and psychological damage and the actual experience of the same may differ. This was ascertained by several scholars (Spector, Zapf, Chen & Frese, 2000; Hobfoll, 1989; Folkman, & Moskowitz, 2004; Naidoo et al., 2012) who proposed that there are certain personal characteristics referred to as resources that can influence one's reaction to stress such as workplace violence. This means that, depending on the existence or lack thereof, these resources may act as a defence against any negative impact that a traumatic event may pose to the person or their absence may render the person vulnerable to such.

Similarly, the Conservation of Resources Theory (COR), which was proposed by Hobfoll in 1989, states that individuals accumulate resources [e.g. personality & emotional intelligence (EQ)] they can apply to accommodate, withstand, or overcome threats. According to Zeidner, Ben-Zur, and Reshef-Weil (2011) and Naidoo et al. (2012), threat (e.g. workplace violence) to these resources can result in negative affective outcomes. The bearing of this theory to this particular study can be demonstrated in a case where an employee is a victim of workplace violence. For an instance, the employee may be constantly threatened with job loss and therefore

experience a breakdown of resilience towards stress which may, consequently, lead to the individual committing errors due to loss of focus and burnout. The lack of focus and burnout which are the causes of the employee's slip-ups may subsequently render them vulnerable to further workplace violence.

COR theory substantiates the assumption by the current study that psychosocial factors such as personality and emotional intelligence do have a moderating effect on the experience of workplace violence and its impact on mental health. These factors may counteract the impact of workplace violence; their loss may be an antecedent of poor mental health; and they may act as determinants of the severity of the impact. In summation, the above given premises clearly illustrates that when workplace violence occurs, personal characteristics which act as moderating factors or rather self-protective resources against trauma can be exhausted leading to poor mental health and further victimization. It also exemplifies that psychosocial (personality & EQ) resources do play a moderating role in the causal relationship between workplace violence and mental health and that the loss of these factors can affect the response and severity of the impact.

2.1.3 The Moayed, Daraiseh, Shell and Salem model of Workplace Bullying

The Moayed, Daraiseh, Shell and Salem (2006) model suggests that workplace bullying (workplace violence) can be explained through a three dimensional model, namely, risk factors, bullying behaviours and outcomes (see Figure 1). According to this model, the industrial and societal background, representing the risk factors, are two peripheral variables that can influence the occurrence of workplace bullying (workplace violence). It proposes that fluctuations in the industry are directly proportional to constant institutional changes and these changes, perceived

to be catalysts of occupational risks for workplace violence, subsequently have an effect on employees.

For an example, the South African mining industry is perpetually undergoing transformation (van der Merwe, 2011; Mashilo, 2010) which, undoubtedly, has implications for work conditions and daily operations. For an environment such as mining that is inherently psychologically and physically demanding, where employees are exposed to harsh working conditions including mining underground, long working hours, occasionally hazardous working conditions, politically charged settings and enormous pressure to perform, these constant changes will inevitably lead to stress induced employee-on-employee conflict and other negative behaviour (Oldfield and Mostert, 2007).

Moayed et al. (2006) also attribute the societal environment as the contributing factor to individuals' response towards organizational changes. The model suggests that people's characteristics and personalities are developed according to the society and environment they stem from, and it is this societal influence that determines how these people will react to problems and conflicts caused by organizational changes at work. The assumption is, based on the type of society one comes from, employees may react to these organizational problems and conflicts (risks) by either transferring their negative feelings/stress to others (externalization-perpetrators) or by succumbing to the negative effects brought on by the changes (internalization-victims) and therefore, making them susceptible to negative behaviours.

Since emotional intelligence, personality and gender roles are constructs of socialization (Seigne, Coyne, Randall & Parker, 2007; Crespi, 2003; Salovey & Mayer, 1990); this theory can also be

used to explain how these factors can moderate the effect of workplace bullying, specifically the development of poor mental health as well as workplace violence. Indeed personality was identified by numerous researchers as a contributing factor in the development of workplace violence (e.g. Bowling, Beehr, Bennett, & Watson, 2010; Zapf & Einarsen, 2010; Balducci, Fraccaroli & Schaufeli, 2011), although the moderating effect of personality on the development of workplace violence is still a debate amongst scholars. The model's explanation of the society/environment as an influential factor to employees' response to organizational changes is consistent with the social learning theorists, who regard past learning experiences as the fundamental root of social behaviour together with the principles of reward and punishment (Bandura, 1936).

The second dimension of the Moayed et al. (2006) model is the negative behaviour exhibited by the bully. This behaviour is segmented into five namely: (1) threat to professional status; (2) threat to personal status; (3) isolation; (4) overwork and; (5) destabilization (Rayner and Hoel, 1997). The characteristics of the perpetrator (bully) are not sufficiently accounted for in this model except to outline the actual behaviour exhibited. There are other perspectives, however, that provide explanations for the root cause of the bullying behaviour. The frustration-aggression theory (FAT) is one perspective that can be used to explain the bully's behaviour. The FAT suggests that the occurrence of aggressive behaviour is always preceded by feelings of frustration and that when humans perceive others as the reason for their failure to achieve desired objective, this causes frustration which subsequently leads to some form of hostility (van der Dennen, 2004; Bushman & O'Brien, 2012; & Berkowitz, 1989). In the case of workplace violence it is thus plausible that employees who are not able to cope with organizational changes and are socially (societal environment) inclined to resolve problems or conflict through hostile

means would therefore sort relief from their frustration by taking it out on those who are viewed as the cause of their frustration.

Another perspective of the Moayed et al. (2006) model is that the outcomes, basically the impact of the bullying behaviour/conduct on the overall wellness of the victim as shown in the third section of the model, may in turn sustain workplace violence as they can intensify other organizational problems and conflicts. For instance, stress can affect an employee's ability to perform effectively or his concentration, may lead to mistakes and further causing problems with co-workers or supervisors and thus rendering the employee susceptible to workplace violence. Stress was also indicated as one of the factors that increased the chances of a healthcare worker referring to him/herself as bullied in Ariza-Montes, Muniz, Montero-Simó, and AraquePadilla's (2013) study. It is significant to comprehend that the outcomes of workplace bullying can increase the victim's chances of exposure to more violation due to their weak state of mental and physical health. An individual who suffers from poor health can be perceived as weak to the bully and therefore an easy target, further making workplace bullying to flourish. It can further serve to breed more violence in a case where the employee is making mistakes as a result of their state of ill-health and as well when the victim lacks the necessary support and becomes a bully himself (Felblinger, 2008).

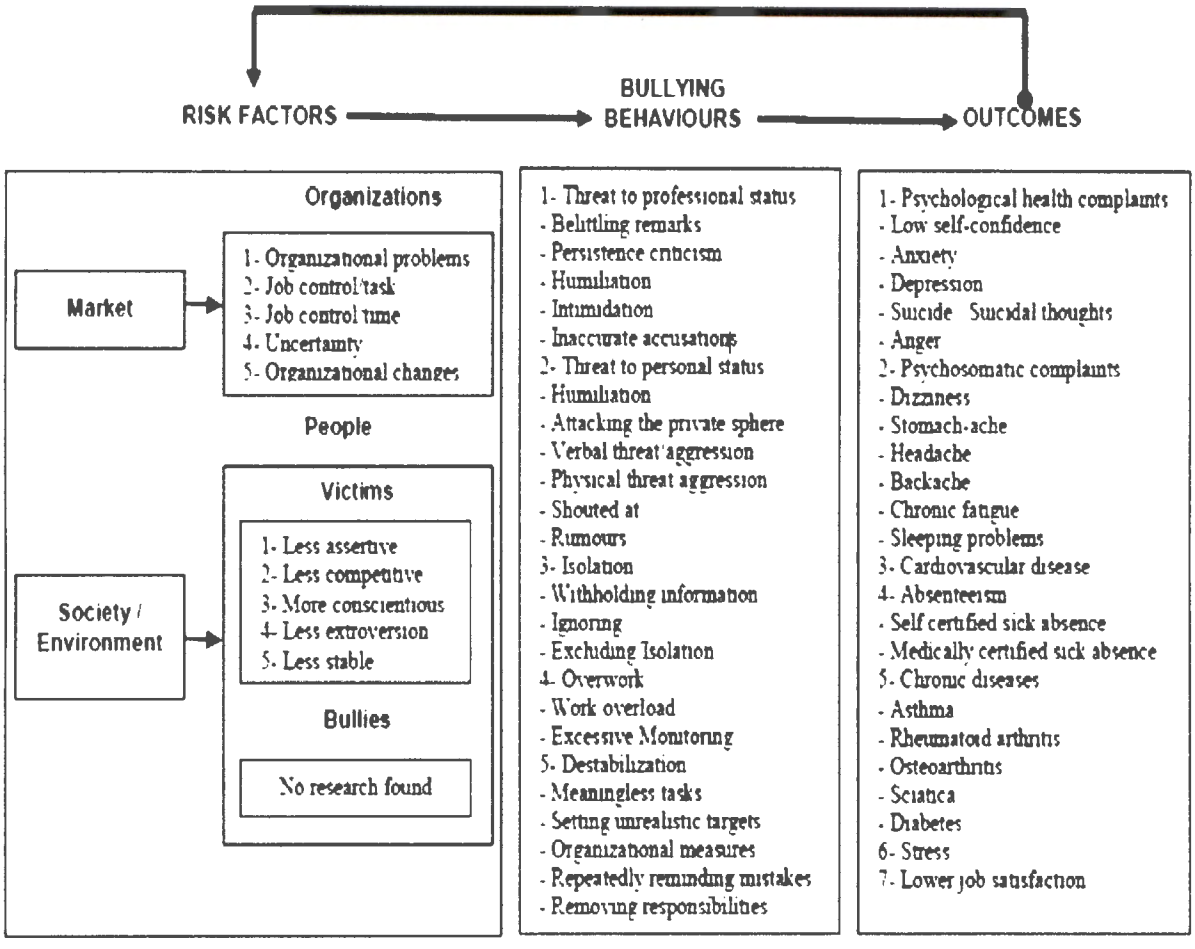

Figure 1: The Moayed, Daraiseh, Shell and Salem model of Workplace Bullying, (Moayed et al. 2006)

This theoretical model highlights the link between the actual incidents with the development of the consequences of workplace violence. Additionally, it examines the influence that societal environment has on the development of workplace violence and by so doing it indirectly highlights the moderating variables such as the victim's personality and how these determine whether health and wellness will be impacted or not. Moreover, the model also shows the link between the social environment in which employees exist and their reaction to the conditions in

the workplace and, according to Einarsen, Hoel and Zapf (2010) when individuals, in their social settings outside of the workplace, experience stressful situations that arouse their negative affect and other critical internal states, workplace violence becomes amplified. Based on the above, this theoretical model is relevant to the current study. A major shortfall though is that it does not thoroughly elaborate on socially constructed factors such as personality, emotional intelligence, gender and age which undoubtedly have a massive influence on the development and the consequences of workplace violence.

2.1.4 Johnson's Ecological Model of Workplace Bullying

Johnson's (2011) ecological model, which is an adaptation of Bronfenbrenner's (1979) ecology of human development perspective, is a conceptual model that posits that the workplace climate is a product of a societal sequence of compartmentalized but linked strata of four interrelated components, namely: the society (macrosystem), the institution (exosystem), the colleagues and managers (mesosystem), and lastly the bully and target (microsystem) as depicted in Figure 2. According to Johnson (2011), each one of these levels may serve as an antecedent for workplace bullying and that bullying behaviour can manifest as a result of one or the other of the distinctive elements found in these levels meaning that workplace violence does not occur in isolation, and due to the ecological structure's inherent interconnectedness, the impact (outcomes) subsequently manifests in all those components that are linked. Thus, the effect will not only be restricted to the victim but the institution, other employees, and society will be affected as well. This is true for the mining sector in the Northwest where politically infused work related disagreements spill over to the society and employees continue their clashes in the communities in which they live.

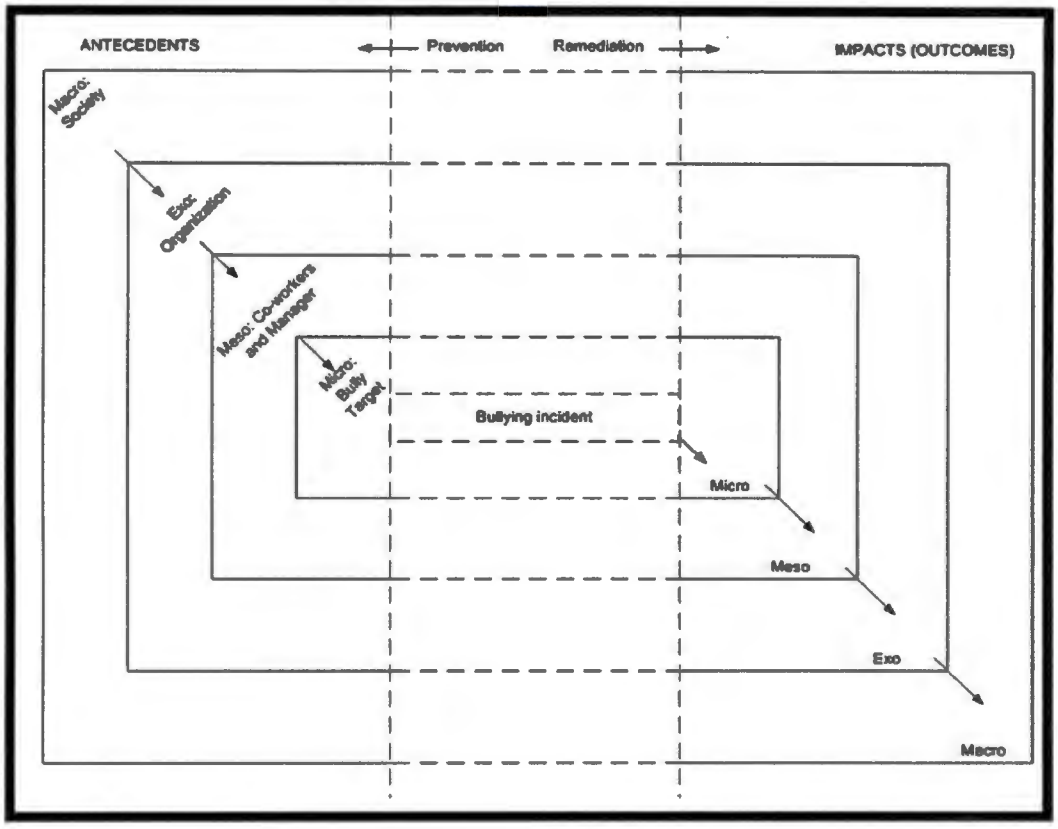

Figure 2: Johnson's ecological model of workplace bullying (Johnson, 2011)

This model is very similar to the Moayed et al. (2006) model in that it also presents workplace bullying in a series of three dimensions however, Johnson's first (antecedents) and last (outcomes) dimensions are stratified into four interlinked layers. Johnson also highlights the role of the co-workers and the manager of both the victim and the perpetrator and further explains how the outcomes of workplace bullying are not only felt by the victim and the organization but also the society the victim lives in. Below is an illustration of the four components:

Microsystem: The aggressor and victim are the key players in this component and it both can be anyone from an assorted group of workers and from the same or a different work unit e.g. co-

workers, supervisors, and subordinates (Sonnentag & Frese, 2003; Johnson & Rea, 2009). Emotional stability is cited as a possible moderator in personality differentiation of victims and non-victims whilst micro political ambition for career growth and poor self-esteem are highlighted as the motivation for bullying behaviour (Glaso, Matthiesen, Nielsen, & Einarsen, 2007; Matthiesen & Einarsen, 2001; Glaso, Nielsen & Einarsen, 2009; Zapf & Einarsen, 2003). Bullies also tend to exhibit narcissistic traits, are domineering and vindictive (Braithwaite, Ahmed, & Braithwaite, 2008; Glaso et al., 2009). In terms of gender discrepancy, females are shown as bullying other females and males bullying both sexes (Zapf & Einarsen, 2003). Workplace bullying has an assortment of consequences including psychological and physical health problems (Brousse et al., 2008; Niedhammer, David, Degioanni, Drummond, & Philip, 2009; Hansen et al., 2006; Kivimaki et al., 2004). According to Lewis and Orford (2005) and MacIntosh (2005) it can also be careers limiting for victims

Mesosystem: This layer of the ecological system is very important because it is comprised of co-workers and supervisors who are at a close proximity to the bullying incidence. Lutgen-Sandvik, (2006) states that these individuals, due to their proximity to the bullying incidence, are ideally situated to intervene and Monks, Smith, Barter, Ireland and Coyne (2009) call this a triadic relationship that includes those who are aware of the bullying, but do not intercede.

According to Johnson (2011), leadership style is a precursor of bullying at this level and Thorough Good, Tate, Sawyer, & Jacobs (2012) suggest that most workplace bullying occurs in up-down vertical mobility style where leaders, managers and supervisors are the key instigators. It is thus important to examine leadership behaviour and how it impacts on employees and organizations when investigating antecedents of workplace violence as studies show that both the

lack of leadership (Laisez-fair leadership) as well as highly authoritarian styles of leadership is associated with more reports of bullying (Einarsen et al., 2007; Einarsen et al., 2010). Colleagues may also play a role in the development of workplace bullying; including the fact that they might fear to intervene on behalf of the victim against their leader and they might also be characterised by gossip, mockery, backbiting, and incivility which Baillien, Neyens, De Witte, and De Cuyper (2009) say is also a key antecedent of bullying. At this level the consequences of workplace violence can range from lack of job satisfaction, low dedication, high staff turnover, poor performance and productivity (Matthiesen, Einarsen, & Mykletun, 2008; Lutgen-Sandvik, 2006; MacIntosh, 2005). The impact is reportedly also felt among workers who merely witness bullying (Hansen et al., 2006; Niedhammer et al., 2006; Niedhammer, David, Degioanni, Drummond & Phillip, 2009).

Exosystem is composed of the organization as a whole as well as unions that represent workers within the organization. At this level, boardroom decisions that affect work policies and address work climate issues can construct a stage for workplace violence to occur (Lipinski & Crothers, 2013). For instance, Hodson, Roscigno, and Lopez (2006), Hutchinson, Vickers, Jackson, and Wilkes (2006), Keashly and Neuman (2010), have shown that workplaces that are not flexible and highly vertical, have unstable operating procedures, are undergoing transformation and retrenchments, job insecurity, and are characterised by an antagonistic and competitive work culture are more likely to have high rates of negative behaviours.

Some of the outcomes at this stage are high staff turnover, poor client services and service delivery, employee commitment, poor performance, a high absenteeism, and increased health

care costs as those who are affected seek health services (Johnson & Rea, 2009; Yildirim, 2009; MacIntosh, Wuest, Gray, & Cronkhite, 2010)

Macrosystem: Antecedents of workplace bullying at this level are societal and cultural norms of behaviour. This layer is comprised of societal characteristics such as cultural values, customs, and laws (Berk, 2000) which shape constructs such as individualism and collectivism (Nesdale & Naito, 2005). For example, if employees are from a society that is fundamentally pro collectivism, which depends on group harmony and consensus, then they are more likely to intervene on behalf of the victim and seek for a more non-violent workplace and team work. For the individualistic cultured employees though, the belief would be that everyone is solely responsible for their work affairs and so they should resolve the conflict on their own. Accordingly, all the other layers of the ecological system will subsequently be influenced by what transpires at this level (Paquette & Ryan, 2001). The outcomes of the macrosystem can have a ripple effect throughout the ecological system (White, 2013), meaning that the workplace will be impacted by ideologies whether good or bad that will influence organizational operations and more particularly employee relations. The family of the victims may also suffer.

Johnson's (2011) model's relevance to this study is that it demonstrates the diversity of interconnected influences on the individuals that are external of the workplace to show causal factors of workplace violence. It also uses a holistic approach which explains variations in the way individuals respond to the same stimuli. For example, a bullying behaviour may be a portrayal of a lifelong learned pattern of conflict resolution skills. Secondly, it can be applied to explain some of the variables proposed in this this study i.e. emotional intelligence, personality and gender roles as constructs of the ecological systems individuals live in.

The model also showcases the antecedents, the violent incident and the impact of the violence. Importantly, it shows workplace violence as an ecological process and how, because of this process, the whole ecological system is destabilized when workplace violence occurs. Remarkably, it is seemingly favoured by several scholars for occupational health issues (Tantranont et al., 2009; Plotnikoff, Prodaniuk, Fein, & Milton, 2005; Salazar & Beaton, 2000) and, significant to the mining industry, to develop disaster management plans (Beaton, Bridges, Salazar, Oberle, Stergachis, Thompson, & Butterfield, 2008). The ecological model is a valuable model that can be used to investigate the dynamics of workplace violence as well as to develop proactive and interventional measures against it.

2.1.5 Five Factor Model (FFM) of Personality

Personality is a dynamic and organized set of characteristics possessed by a person that uniquely influences his or her cognitions, motivations, and behaviours in various situations (Deniz & Ertosun, 2010). The five-factor model of personality was formulated to explain personality based on five basic dimensions: Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness to Experience. The FFM is a theoretical framework for personality as a mediating factor for workplace violence in the current study. It describes personality through five broad dimensions of personality called the Big Five personality traits which contain and incorporate most known personality traits and are assumed to represent the basic structure of personality (O'Connor, 2002). According to Pervin and John (2001), these traits are consistent patterns of thoughts, feelings, or actions that distinguish people from one another. Based on this model, two individuals can experience the same type of workplace violence from the same perpetrator but the impact on their mental health, may however, vary.

Personality has been linked to workplace violence as an antecedent by several scholars (Denz & Ertosun, 2010; Linton & Power, 2013; and Persson et, al., 2009). However, there is a lot of controversy surrounding the antecedent effect of personality to the development of workplace violence. Scholars like Olweus (2003) suggest that victims tend to exhibit two types of personality, the passive-submissive type which signals to the bully that they are insecure and worthless individuals, and that they will not retaliate if they are attacked or insulted. The second type of victim he termed, the provocative victim (Olweus, 1993; Matthiesen & Einarsen, 2007); this type is characterized by a combination of both anxious and aggressive reaction patterns and behaves in ways that may annoy others and thus render them susceptible to being violated. On the contrary, Leymann (1996), Coyne, Seigne, Randall (2000) and Shin, 2005 tend to disagree with the notion that personality can be the basis for victimization; according to these scholars, the aggressive behaviour is the symptom of the workplace bullying and that it is mistaken for the original character of the victim.

Notable limitations of the FFM are that, it does not explain all of human personality and it neglects other domains of personality, such as culture, religiosity, Machiavellianism etc. It does not take into cognisance the role of learned behaviour, and the model is also less useful at predicting specific behaviours. In summation, personality may explain workplace violence; however, it does not do so to its full extent.

2.1.6 Goleman's Emotional Intelligence Theory

Although the concept of emotional intelligence was initially postulated by Howard Gardner, Peter Salovey and John Mayer in the 1970s and 80s, it was Daniel Goleman who advanced the popularity of the theory in 1995 (Shiner, 2015). Goleman's (1995) work was focused on

organizational development in his bid to make the workplace more compassionate and humane, and to show that success in the workplace requires more than just traditional intelligence (intelligence quotient, IQ). The theory stems from the original theory of "Multiple Intelligence" developed by Howard Gardner in 1983 (Visser, Ashton & Vernon, 2006; Slavin, 2012). This theory hypothesizes that there are essential behavioural and personality fundamentals that are required for one to achieve success.

Currently there are three models that define emotional intelligence, namely: the Ability model, the trait model and the mixed model (Stys & Brown, 2004; Fernández-Berrocal & Extremera, 2006; Kluemper, 2006). The Ability model, founded by Salovey and Mayer in 2004, defines EI as, "The ability to perceive emotion, integrate emotion to facilitate thought, understand emotions and to regulate emotions to promote personal growth" (Mayer & Salovey, 1997). The model posits that individuals possess unique methods of processing emotional information and they also differ in their ability to associate this processing to a broader cognition. On the other hand, the Trait model is referred to as a constellation of self-perceptions located at the lower levels of personality hierarchies (Petrides, Pita, & Kokkinaki, 2007).

The third model is the mixed model, also known as Goleman's (1995) emotional intelligence theory. It is regarded to have a broader explanation of EI that includes cognitive abilities and personality paradigms and aptitudes (Mayer, Salovey, & Caruso, 2000; Brackett & colleagues, 2011). This model defines EI as a wide array of competencies and skills that drive leadership performance. According to Goleman, every individual has an inherent emotional intelligence that regulates their prospects for attaining emotive skills that must be harnessed in order to achieve optimal performance. The mixed model is propounded on the basis that success is dependent on

the ability of effective consciousness; to be able to regulate and to manage one's own feelings, and those of others (Goleman, 2001). Stemming from this underpinning, Goleman identified five main EI constructs namely; self-awareness, self-regulation, social skills, empathy and motivation. The relevance of Goleman's mixed model to the present study is that one of his main views is that emotional illiteracy is the cause of numerous social ills including mental illness (Goleman, 1995) which is a dependent variable under study. Based on this view, poor mental health occurs as a result of an individual's inability to self-regulate one's own emotions when confronted with workplace violence. Accordingly, other scholars (Sheehan, 1999; Slaski & Cartwright, 2003; Cartwright & Pappas, 2008) have also advocated that EI can moderate the relationship between workplace psychosocial risks and aggressive acts.

A low EI has also been implicated in the targeting of individuals. Lomas, Stough, Hansen and Downey (2011) found that failure to control and manage one's own feelings significantly predisposed one to victimization. Consistently, other studies (Matthiesen & Einarsen, 2001; Glaso, Mathissen, Nielson & Einarsen, 2007) also identified some differences in emotional instability amongst the victims and non-victims of workplace violence. A possible reason for victimization due to emotional instability maybe caused by the vulnerability that a low EI presents and that vulnerability might render victims susceptible to negative behaviours. The perpetrators may just be taking advantage of an already defencelessness situation and hence the pattern of emotional instability amongst victims.

Another Goleman's principle that is of relevance to the current study is that of social competence in relation to being aware of other individuals' emotions and being able to manage relationships. Based on this principle, we can posit that if an individual does not possess these skills, failure to

manage conflict and showing empathy, is bound to occur. Consistently, Lomas, Stough, Hansen and Downey (2011) found that the EI dimension of understanding the emotions of others was found to be negatively related with bullying behaviours. Overall, EI appears to be a catalytic agent in both exhibiting violent behaviours and susceptibility to victimization in bullying (Kokkinos & Kipritsi, 2012; Murray & Branch, 2012; Mckenna & Webb, 2013) supporting the principles of Goleman's emotional intelligence theory.

	Self (personal competence)	**Other (social competence)**
Recognition	Self-awareness • Emotional self-awareness • Accurate self-assessment • Self-confidence	Social awareness • Empathy • Service orientation • Organizational awareness
Regulation	Self-management • Self-control • Trustworthiness • Conscientiousness	Relationship management • Communication • Conflict management • Teamwork and collaboration

Figure 3: Goleman's (2001) 2 by 2 model of emotional competencies

Ultimately, Goleman's theory stresses that emotional competencies (IE) are helpful in the navigation of unexpected changes or when confronted with adversity that may occur either in personal, social or workplace circumstances. With reference to the current study and the theory, emotional intelligence was shown to play a critical role in workplace violence amongst victims and non-victims in Glaso, Matthiesen, Nielsen and Einarsen (2007) and, Matthiesen and Einarsen's (2001) study. Similarly, Branchl and Murray (2012) found that victims of workplace

bullying reported lower EI scores as compared to their non-victimized co-workers as well as showing significant incompetence in coping with their own emotions. Therefore, EI can play a role in susceptibility to workplace violence and to the development of poor mental health. This is relevant to the study as it also highlights concepts (stress, adaptability, problem solving etc.) that are being under investigation in the study. Moreover, Goleman's theory of EI emphasizes self-awareness, social awareness, self-management, and relationship management aptitudes, all of which are relevant for the workplace violence perpetrator-victim interaction.

Goleman's EI theory, like other theorists, has been critiqued by other scholars. Researchers like Antonakis, Ashkansay and Dasborough (2009) claim that Goleman's theories were not accurately tested. For instance, in Goleman's EI model, possessing high emotional intelligence is automatically presumed to steer an individual towards positive behavioural constructs such as excellence, determination, empathy, and conflict resolution. However, personalities such as narcissists, sociopaths and psychopaths may have a high level of EI in that they may be able to perceive emotions accurately in others but they may not be inclined to respond appropriately to those emotions. Individuals with a high score of EI may instead refine their emotional skills and become better at manipulating others. Goleman's model assumes that intelligence is only used in prosocial ways but as suggested by Shiner (2015), it can be used in antisocial behaviour.

2.1.7 Social Role Theory (SRT): The differentiation of gender in workplace violence

The social role theory (SRT) was developed as a gender related theory in the 1980s (Dulin, 2008) and was propounded by Eagly in 1986. It is a macro theory that focuses on the organization of social behaviour by examining the relations between and amongst individuals, groups, societies, and economic classifications Dulin, 2008). This theory highlights that,

historically, societal responsibilities were solely dependent on gender and it is this division of labour that engineered gender differentiated behaviour that led to socially constructed and institutionalized gender orientated societal roles (Eagly, 1987, 1997; Eagly, Wood, & Diekman, 2000; Bérés, 2011). Thus the basic proposition for gender in this theory is that males and females, as socially constructed, are inclined to occupy different ascribed roles within social structures and are adjudged based on divergent expectations for how they ought to behave (Shimanoff, 2009). Traditionally, males, perceived to be masculine, were allocated duties that were outside the home, whilst females, perceived to be feminine, were often assigned responsibilities in the home (Eagly, 1987) and these roles were transferred to subsequent generations.

According to SRT, gender roles are affixed and structured by certain expectations that individuals must conform to (Shimanoff, 2009). Men are expected to possess agentic qualities and thus exhibit self-assuredness, dominance, and self-reliance whilst females are relegated with communal qualities indicated by being nurturing, kind, generous, helpfulness and caring for others (Dulin, 2008; Lanaj & Hollenbeck, 2015). Males are therefore expected to be macho whilst females are expected to be feminine, homely and subordinate (Janebova, 2007). These expectations subsequently create a societal platform where various forms of aggression and toughness are encouraged in men, whilst the opposite is expected of females (Eagly & Steffen, 1986; Eagly & Wood, 1991; Zhou, 2012).

The social role theory (SRT) also focuses on gender disparities in psychological processes that are fundamental to aggressive behaviour (Eagly & Steffen, 1986; Morales-Vives & Vigil-Colet, 2010). As illustrated by Murray-Close, Ostrov, Nelson, Crick, and Coccaro, (2010), it is thus

feasible that it is also applicable to explain gender differences in workplace aggression. For instance, the influence on behaviour by social roles is reinforced through the process of socialization through parenting and the schooling system; it is therefore expected to be manifested in the working environment as employees are products of the society that creates and structures the social roles and differentiated expectations on gender behaviour. In this study, the hypothesis is that males will be found to engage in workplace violence more than females due to the males' inclination to be macho and the opposing behviour of females. This assumption is supported by several empirical studies which found that aggression is generally higher in males as compared to their female counterparts (McFarlin et al., 2001; Archer, 2004; Dupre & Barling, 2006; Haines et al., 2006) Conferring from this theory, female employees will therefore refrain from aggressive behaviour as it is perceived to be conflicting with the behavioural expectations that are assigned to their gender and males will engage in negative behaviour as it is aligned to their societal roles as men. According to Eagly's beliefs, this is because it is the social roles themselves that influence behaviour rather than the gender itself (Dulin, 2008).

The SRT also submits that generally, society has always operated on a patriarchal system in which females are allocated lower societal status and have minimal control over resources (Eagly & Wood, 1999; Eagly, Wood, & Diekman, 2000; Makama, 2013) and men are hierarchically superior to females in almost all aspects. Although the status of females has evolved, in a working environment this societal gender hierarchy may still cause serious conflicts, particularly when the female employee has to operate in her professional role as the superior official rather than submit to her subordinate male employee as social roles demand (e.g. a female mining engineer supervisor vs. a male junior mining inspector). In an attempt to regain his mastery, the

male employee may start being impertinent and passive aggressive so as to "normalize" the situation (Eagly & Steffen, 1986) and gradually workplace violence would result.

This theory is applicable to this study as it explains gender differences in relevance to human aggression and subsequently workplace violence. It addresses how socialization influences behaviour and in particular gender roles. Other studies, (Giancola, Levinson, Corman & Holt, 2009; Wimmer, 2009; Weaver, Vandello, Bosson, & Burnaford, 2010; Warburton and Anderson, 2015), also support the theory's supposition that males engage in more aggression than females.

The shortcoming of this theory is that it assumes that human behaviour is automatic and that individuals will behave in a manner that the structured social roles dictate. Pertaining to aggression, emphasis is laid heavily on physical aggression and little consideration is given to other forms of aggression. Whilst other scholars (Archer, 2004; Hess & Hagen, 2006; Toldos, 2005; Card, Stucky, Sawalani & Little, 2008) have indicated that the lack of physical strength may incline females to engage in other forms of aggression rather than physical. Indeed studies such as Anderson and Huesmann (2003); Wimmer (2009) and Lundh, Daukantaite and Wangby-Lundh (2014) suggest that females tended to engage in indirect subtle, psychological and emotional types of bullying (WPV). Also, Dulin (2008) highlights that Eagly's research for the SRT was experimental and not conducted in the natural habitat of human behaviour. Dulin (2008) reckons that maybe the research might have yielded a different outcome had it been done in a real societal setting.

On the other hand, although differences in gender engagement of aggressive behaviours exists; scholars are continuously debating as to whether these disparities between the two genders are

significant risk factors. Zhou (2012), for example, found no significant gender differences, the same was concluded for Forbes, Zhang, Doroszewicz and Haas's (2009) gender study on indirect and direct aggression on both Chinese and U.S. college students, and so did Forrest, Forrest, Eatough, and Shevlin (2005). These scholars would, therefore, be inclined to support the SRT in regards to aggression regardless of gender.

Generally, the implication of the social role theory is that gender differences that exist in the social setting (home and community) tend to permeate the workplace. As a result workplace violence occurs when social roles are violated such as when women, for instance, occupy what is perceived to be traditionally gender stereotyped (male) role.

2.1.8 Frustration Aggression Theory (FAT)

The Frustration Aggression Theory (FAT) was formulated by Dollard, Doob, Miller, Mowrer, and Sears in 1939. These scholars hypothesized that the occurrence of aggressive behaviour always presupposes the existence of frustration, and that existence of frustration always leads to aggression (Bushman & O'Brien, 2012). According to the FAT, feelings of tension/anger occur when efforts to reach some goal are obstructed which in turn generate feelings and/or behaviour of aggression.

The labour unrest which led to violence in the mining sector in Marikana in 2012 is a good exhibition of frustration which results in aggression. According to several accounts (i.e. Chinguno, 2013; Muswaka, 2014; Ntswana, 2014; Buitendag & Coetzer, 2015), the miners became frustrated when Impala Platinum, a mining company, gave one category of workers an 18% pay rise and excluded other workers. Furthermore, workers were also frustrated by their living conditions and their heavy indebtedness while mining executives received the majority of

the profits and thus they demanded a wage increase of 200% ranging from three thousand rands to nine thousand rands per month (Bowman & Isaacs, 2014; Hill & Maroun, 2015). Rock drillers, particularly, demanded a salary increase from four thousand rands to twelve thousand rands per month. Negotiations between the miners and the mining corporates did not yield any agreement and so the Marikana miners' strike commenced on the 10th of August, 2012.

According to Muswaka (2014), the strike reached its peak after management of Lonmin, a British producer of platinum group metals operating in the Bushveld Complex of South Africa, did not pitch to a meeting convened with the workers. Approximately three thousand rock drillers downed their tools and ceased all operations in protestation of what they viewed as a sneer by the management. From hence forth incidences of violence were reported around the mining community (International Communist Union (ICU, 2012) until the whole debacle eventually ended in the historical massacre on the 16th of August 2012 ending in at least thirty six miners killed and seventy eight wounded by members of the South African Police Service (SAPS) (Muswaka, 2014). Based on the FAT theory, the suggestion would therefore be that the miners became frustrated when their needs were not addressed by the mining companies. They perceived the mining companies as a stumbling block obstructing their goals and therefore became hostile.

Although the FAT does have valid ideologies on aggression, the assumption that frustration inevitably leads to aggression is not applicable in all instances. Personal attributes may evoke other reactions that do not lean towards aggression as indicated by Miller (1941). A frustrated individual may choose to circumvent the source of frustration or may work to find a way around obstacles. The theory has also been critiqued by other scholars such as Fromm (1974) who stated

that aggression may not always be instigated by frustration but may be triggered by other noxious stimuli rather than by frustration. The FAT theory is, however, relevant for this study for it highlights the frustrations that are inherent in the mining industry environment. The suggestion is that when the working environment is conducive for frustration then employees will experience levels of frustration and aggression will inevitably occur.

2.1.9 Social Learning Theory

Social learning theories (Bandura, 2001; Mischel, 1973; Mischel, 1999; Mischel & Shoda, 1995) suggest that aggression is attained in the same way as other complex forms of social behaviour and that is through the observation of others or through personal experience. Learning theories of aggression are based on both operant and classical conditioning (Bushman & O'Brien, 2012). Operant conditioning proposes that behaviour is motivated by pursuit of pleasure and avoidance of pain. In view of this, a perpetrator will engage in the act of violating others (workplace violence) because the act satisfies a particular need that brings pleasure for him. Avoidance of pain in this instance would be achieved when the perpetrator transfers self-pain or misgivings unto the victim through bullying, harassing or being aggressive towards them. Agreeably, the derivation of pleasure and avoidance of pain may motivate behaviour; however, in general, adults may not necessarily engage in such behaviours by virtue of other personal attributes like empathy and through the reasoning that other pleasure and pain avoidance avenues exist.

Unlike Operant conditioning, Classical conditioning proposes that behaviours are determined by learned pairing of two or more stimuli. Albert Bandura theorized that cognitive inferences, generalizations, and interpretations of observation and imitation are at the root of aggressive

behaviour. For example, frequently witnessing violence may lead to the repetition and acceptance of the behaviour. The suggestion is that workplace bullies learn from observing others perpetuating and endorsing the same behaviours and therefore deem those behaviours as acceptable and are thus inclined to also victimise others. This assumption is accurate to a certain level; however, an average adult may not emulate such behaviours for the fear of consequences of such actions and/or even due to the negative emotions that were experienced when witnessing the incident initially.

Social learning theory is particularly useful in understanding workplace violence because it explains contributory factors to aggression such as the perpetrator having experienced victimization. A major short coming, however, is that it limits aggressive behaviour to the learning process and the environment of the perpetrator and gives less attention to other factors such as cognitive processes that can influence the outcome of the social learning processes.

2.2 Theoretical Perspectives

Mental health is in nature very subjective and this may render the precise conceptualization of this phenomenon challenging. Various factors such as the cultural and spiritual aspects have to be taken into cognisance meaning that the notion of a common universal classification of mental health is almost unfeasible. Subsequently, different schools of thought, in their bid to explain the underlying stimuluses of mental health, inevitably differ in their perspective of the concept. However, even though variations on the hypotheses of mental health do exist, one critical defining feature which is common amongst all of them is the emphasis on the component of human strengths. Almost all perspectives place value on the positive quality of life aspects instead of the absence of those that are negative.

Researchers (Manwell, Barbic, Roberts, Durisko, Lee, Ware & McKenzie, 2015; Flanagan, Hartnoll and Murray, 2009; Sartorius, 2002; Watson and Rayner, 1920) have explained mental health from various perspectives using diverse models in support of their convictions. For an instance, Carter, Hidreth and Knutson (1959) defined mental health as the absence of mental disease or a state of being that also includes the biological, psychological or social factors which contribute to an individual's mental state and ability to function within the environment. In consistence with this definition, Sartorius' (2002) perspective views the existence of mental health, as a solitary entity, as impossible as it is an indispensable fragment of primary health. Accordingly, he defines mental health three dimensionally, first as the lack of illness, and secondly as a state of being that allows the optimal performance of all its functions or as a state of balance within oneself and between oneself and one's physical and social environment. Other researchers (e.g. Mauthner & Platt 1998; Parkinson, 2008; Southwick, Bonanno, Masten, Panter-Brick & Yehuda, 2014; Bhugra, Till and Sartorius, 2013), however, have also included resilience, self-esteem, self-efficacy, optimism, life satisfaction, hopefulness, perceptions and judgments about sense of coherence and meaning in life, and social integration as a significant measure of mental health. Gerben, Westerhof, Corey and Keyes (2010) went further to include three fundamental components of positive mental health which are feelings of happiness and satisfaction with life (emotional well-being), positive individual functioning in terms of self-realization (psychological well-being), and positive societal functioning in terms of being of social value (social well-being).

Bhugra, Till and Sartorius (2013) advance the explanation of mental health by assessing it from the concept of ability. This perspective emphasizes a person's ability to be able to develop and

sustain affectionate relations, to be able to participate in social roles as mandated in their culture and to adapt to change, distinguish, recognize and communicate positive behaviours and thoughts as well as being able to cope with feelings such as sadness. Bhugra, Till and Sartorius (2013) suggest that mental health is not merely the absence of disease or the individual's ability to interact with their environment but it is also the individual's capability to adequately adjust to psycho-social challenges and to manage adversity through attaining a certain level of control over their cognitive and emotional processes.

From a cognitive-behavioural perspective, metal health is conceptualized as the inference of the inspiration to obtain valued objectives, regardless of the consequential negative emotions and thoughts due to the quest to achieve these objectives (Keegan, 2012). Basically, this perspective is rooted in the fundamental belief that thoughts, behaviours, and feelings work interchangeably to influence mental health. The approach submits that it is an individual's defective perceptions about others, the society and the self that results in poor mental health (McLeod, 2008). It suggests that if an individual can interpret (cognitive processing) the events (external stimuli) occurring in their society through their interaction with that society, the individual may become emotionally and behaviourally disturbed (Field, Beeson & Jones, 2015; Sánchez, Trujillo & Sánchez, 2009).

The relevance of the cognitive-behavioural perspective to the current study is that it provides a broad range of significant ideologies that attempt to explain mental health. Furthermore, based on this perspective, workplace violence (stimuli) can be examined as the interaction between the individual and the environment; and depending on how the victimized employee interprets (cognitive processing) the incident, development of maladaptive behaviour and distorted

thinking may occur resulting in one or the other of various psychological disorders i.e. anxiety, depression, PTSD etc. and consequently the health and wellness of the employee.

The conservation of resources theory (COR) (Hobfoll, 1989), appraises mental health from the concept of personal attributions called resources. The perspective places emphasis on existing or accumulated personal resources, such as personality and emotional intelligence (EQ), that can be applied to accommodate, withstand, or overcome threats like workplace violence. According to this perspective these individual resources act as a buffer against any negative impact of occupational stressors such as workplace violence which may lead to poor mental health. Accordingly, several scholars such as Spector, Zapf, Chen and Frese (2000), Hobfoll (19890, Folkman and Moskowitz (2004) and Naidoo et al., (2012) have ascertained that in circumstances of trauma (I.e. workplace violence), individuals may exhibit commonalities in their response to the event; however, in other cases the trauma may not lead to the same emotional and psychological damage and the actual experience of the same may differ. The conservation of resources theory perspective posits that mental health is dependent on personal characteristics referred to as resources that can influence one`s reaction to stress such as workplace violence. This means that, depending on the existence or lack thereof, these resources may act as a defence against any adversity that a traumatic event may pose to the person or their absence may render the person vulnerable to such.

Zeidner, Ben-Zur, and Reshef-Weil (2011) and Naidoo et al., (2012) further elaborate on how this perspective explains mental health and workplace violence. According to the authors, threat (e.g. workplace violence) to individual resources can result in negative affective outcomes. The bearing of this perspective to this particular study can be demonstrated in a case where an

employee is a victim of workplace violence. For an instance, the employee may be constantly threatened with job loss and therefore experience a breakdown of resilience towards stress which may, consequently, lead to the individual committing errors due to loss of focus and burnout. The lack of focus and burnout which are the causes of the employees' slip-ups may subsequently render them vulnerable to further workplace violence and therefore more subsequent psychological problems.

The COR theoretical perspective substantiates the assumption by the current study that psychosocial factors such as personality and emotional intelligence do have a moderating effect on the experience of workplace violence and its impact on mental health. These factors may counteract the impact of workplace violence; their loss may be an antecedent of poor mental health; and they may act as determinants of the severity of the impact. In summation, the conservation of resources theoretical perspective clearly illustrates that when workplace violence occurs, personal characteristics which act as moderating factors or rather self-protective resources against trauma can be exhausted leading to poor mental health and further victimization. It also exemplifies that psychosocial (personality & EQ) resources do play a moderating role in the causal relationship between workplace violence and mental health and that the absence of these factors can affect the response and severity of the impact.

Workplace violence can be explained from the perspective of the social earning theory. This perspective (Bandura, 2001; Mischel, 1973; Mischel, 1999; Mischel & Shoda, 1995) submits that workplace violence such as aggression is attained in the same way as other complex forms of social behaviour and that is through the observation of others or through personal experience. Perspectives of aggression are based on both operant and classical conditioning (Bushman &

O'Brien, 2012) in which operant conditioning proposes that behaviour is motivated by pursuit of pleasure and avoidance of pain. In view of this, a perpetrator will engage in the act of violating others (workplace violence) because the act satisfies a particular need that brings pleasure for him. Avoidance of pain in this instance would be achieved when the perpetrator transfers self-pain or misgivings unto the victim through bullying, harassing or being aggressive towards them. Agreeably, the derivation of pleasure and avoidance of pain may motivate behaviour; however, in general, adults may not necessarily engage in such behaviours by virtue of other personal attributes like empathy and through the reasoning that other pleasure and pain avoidance avenues exist.

From the classical conditioning perspective, behaviours are determined by learned pairing of two or more stimuli. Albert Bandura suggests that cognitive inferences, generalizations, and interpretations of observation and imitation are at the root cause of aggressive behaviour. For example, frequently witnessing violence may lead to the repetition and acceptance of the behaviour. The suggestion is that workplace bullies learn from observing others perpetuating and endorsing the same behaviours and therefore deem those behaviours as acceptable and are thus inclined to also victimise others. This assumption is accurate to a certain level; however, an average adult may not emulate such behaviours for the fear of consequences of such actions and/or even due to the negative emotions that were experienced when witnessing the incident initially.

The social learning theoretical perspective is particularly useful in understanding workplace violence because it explains contributory factors to aggression such as the perpetrator having experienced victimization. A major short coming, however, is that it limits aggressive behaviour

to the learning process and the environment of the perpetrator and gives less attention to other factors such as cognitive processes that can influence the outcome of the social learning processes.

From the perspective of Dollard, Doob, Miller, Mowrer and Sears' (1939), Frustration Aggression Theory (FAT), it is hypothesized that the occurrence of aggressive behaviour always presupposes the existence of frustration, and that the existence of frustration always leads to aggression (Bushman & O'Brien, 2012). According to this perspective, feelings of tension/anger occur when efforts to reach some goal are obstructed which in turn generate feelings and/or behaviour of aggression.

As demonstrated in this perspective, the labour unrest which led to violence in the mining sector in Marikana in 2012 is a good exhibition of frustration which results in aggression. Chinguno, (2013); Muswaka, (2014);, Ntswana, (2014); Buitendag and Coetzer, (2015), stated that the miners became frustrated when their employer, Impala Platinum, a mining company, gave one category of workers an 18% pay rise and excluded other workers. Furthermore, workers were also frustrated by their living conditions and their heavy indebtedness while mining executives received the majority of the profits and thus they demanded a wage increase of 200% ranging from three thousand rands to nine thousand rands per month (Bowman & Isaacs, 2014; Hill & Maroun, 2015). Rock drillers, particularly, demanded a salary increase from four thousand rands to twelve thousand rands per month. Negotiations between the miners and the mining corporates did not yield any agreement and so the Marikana miners' strike commenced on the 10th of August, 2012.

According to Muswaka (2014) the strike reached its peak after management of Lonmin, a British producer of platinum group metals operating in the Bushveld Complex of South Africa, did not pitch to a meeting convened with the workers. Approximately three thousand rock drillers downed their tools and ceased all operations in protestation of what they viewed as a sneer by the management. From hence forth incidences of violence were reported around the mining community (International Communist Union (ICU, 2012) until the whole debacle eventually ended in the historical massacre on the 16th of August 2012 ending in at least thirty six miners killed and seventy eight wounded by members of the South African Police Service (SAPS) (Muswaka, 2014). Based on the FAT theory, the suggestion would therefore be that the miners became frustrated when their needs were not addressed by the mining companies. They perceived the mining companies as a stumbling block obstructing their goals and therefore became hostile.

Although the FAT perspective does have valid ideologies on aggression, the assumption that frustration inevitably leads to aggression is not applicable in all instances. Personal attributes may evoke other reactions that do not lean towards aggression as indicated by Miller (1941). A frustrated individual may choose to circumvent the source of frustration or may work to find a way around obstacles. The theory has also been critiqued by other scholars such as Fromm (1974) who stated that aggression may not always be instigated by frustration but may be triggered by other noxious stimuli rather than by frustration. This perspective is, however, relevant for this study for it highlights the frustrations that are inherent in the mining industry environment. The suggestion is that when the working environment is conducive for frustration then employees will experience levels of frustration and aggression will inevitably occur.

The moderating effect of personality would be explained from the perspective of the general aggression and five factor models (Hosie, Gilbert, Simpson and Daffern (2014). From this perspective, employees' aggression is as a result of a life history of aggression which perpetuates increased anger and more aggression. It also suggests that the FFM paradigms of personality play a role in the activation of aggression or aggressive responses. For instance, personality constructs such as agreeableness and conscientiousness are assumed to trigger life learned aggression. Personality is a dynamic and organized set of characteristics possessed by a person that uniquely influences his or her cognitions, motivations, and behaviours in various situations (Deniz & Ertosun, 2010). The five-factor model of personality was formulated to explain personality based on five basic dimensions: Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness to Experience. The FFM is a theoretical framework for personality as a moderating factor for workplace violence in the current study. It describes personality through five broad dimensions of personality called the Big Five personality traits which contain and incorporate most known personality traits and are assumed to represent the basic structure of personality (O'Connor, 2002). According to Pervin and John (2001) these traits are consistent patterns of thoughts, feelings, or actions that distinguish people from one another. Based on this model, two individuals can experience the same type of workplace violence from the same perpetrator, the impact on their mental health, may however vary. Similar to the perspective, Denz and Ertosun (2010), Linton and Power (2013); Persson et al., (2009) have linked personality to workplace violence as an antecedent as well. Scholars like Olweus (2003) also suggest that victims tend to exhibit two types of personality, the passive-submissive type which signals to the bully that they are insecure and worthless individuals, and that they will not retaliate if they are attacked or insulted. The second type of victim, he termed the provocative

victim (Olweus, 1993; Matthiesen & Einarsen, 2007); this type is characterized by a combination of both anxious and aggressive reaction patterns and behaves in ways that may annoy others and thus render them susceptible to being violated. On the contrary, Leymann (1996), Coyne, Seigne, Randall (2000) and Shin (2005), tend to disagree with the notion that personality can be the basis for victimization, according to these scholars the aggressive behaviour is the symptom of the workplace bullying and that it is mistaken for the original character of the victim. In summation, the general aggression and five factor models may fairly well explain personality in the context of workplace violence.

The mining employees' emotional intelligence may be explained from the three dimensional mixed model perspective of emotional intelligence, namely: the Ability model, the Trait model and the mixed model (Stys & Brown, 2004; Fernández-Berrocal & Extremera, 2006; Kluemper, 2006). The Ability model, founded by Salovey and Mayer in 2004, defines EI as, "The ability to perceive emotion, integrate emotion to facilitate thought, understand emotions and to regulate emotions to promote personal growth" (Mayer & Salovey, 1997). The model posits that individuals possess unique methods of processing emotional information and they also differ in their ability to associate this processing to a broader cognition. On the other hand, the Trait model is referred to as a constellation of self-perceptions located at the lower levels of personality hierarchies (Petrides, Pita, & Kokkinaki, 2007), meaning that EI is a grouping of personality traits that are self-described by the individual based on their own behaviour. The third model is the mixed model, also known as Goleman's (1995) emotional intelligence theory. It is regarded to have a broader explanation of EI that includes cognitive abilities and personality paradigms and aptitudes (Mayer, Salovey, & Caruso, 2000; Brackett, Rivers, & Salovey, 2011).

As mentioned earlier in text, this model defines EI as a wide array of competencies and skills that drive leadership performance. According to Goleman, every individual has an inherent emotional intelligence that regulates their prospects for attaining emotive skills that must be harnessed in order to achieve optimal performance. The mixed model is propounded on the basis that success is dependent on the ability of effective consciousness; to be able to regulate and to manage one's own feelings, and those of others (Goleman, 2001). And stemming from this underpinning, Goleman identified five main EI constructs namely; self-awareness, self-regulation, social skills, empathy and motivation. The relevance of this mixed model perspective to the present study is that one of the main views is that emotional illiteracy is the cause of numerous social ills including mental illness (Goleman, 1995) which is a dependent variable under study. Based on this view, poor mental health occurs as a result of an individual's inability to self-regulate one's own emotions when confronted with workplace violence and workplace violence occurs for the same reasons. Accordingly, other scholars (i.e. Sheehan, 1999; Slaski & Cartwright, 2003; & Cartwright & Pappas, 2008) have also advocated that EI can moderate the relationship between workplace psychosocial risks and aggressive acts.

A low EI has also been implicated in the targeting of individuals. Lomas, Stough, Hansen and Downey (2011) found that failure to control and manage one's own feelings significantly predisposed one to victimization. And consistently, other studies (Matthiesen & Einarsen, 2001; Glaso, Mathissen, Nielson & Einarsen, 2007) also identified some differences in emotional instability amongst the victims and non-victims of workplace violence. A possible reason for victimization due to emotional instability maybe caused by the vulnerability that a low EI presents and that vulnerability might render victims susceptible to negative behaviours. The

perpetrators may just be taking advantage of an already defencelessness situation and hence the pattern of emotional instability amongst victims.

Another principle that is of relevance to the current study is that of social competence in relation to being aware of other individuals' emotions and being able to manage relationships. Based on this principle, we can posit that if an individual does not possess these skills, failure to manage conflict and showing empathy, is bound to occur. And consistently, Lomas, Stough, Hansen and Downey (2011) found that the EI dimension of understanding the emotions of others was found to be negatively related with bullying behaviours. Overall, EI appears to be a catalytic agent in both exhibiting violent behaviours and susceptibility to victimization in bullying (i.e. Kokkinos & Kipritsi, 2011; Murray & Branch, 2012; & Mckenna & Webb, 2013) supporting the principles of Goleman's emotional intelligence theory.

Ultimately, this perspective stresses that emotional competencies (IE) are helpful in the navigation of unexpected changes or when confronted with adversity that may occur either in personal, social or workplace circumstances. And in reference to the current study and the theory, emotional intelligence was shown to play a critical role in workplace violence amongst victims and non-victims in Glaso, Matthiesen, Nielsen and Einarsen (2007) and, Matthiesen and Einarsen's (2001) study. And similarly, Branchl and Murray (2012) found that victims of workplace bullying reported lower EI scores as compared to their non-victimized co-workers as well as showing significant incompetence in coping with their own emotions. Therefore EI can play a role in susceptibility to workplace violence and to the development of poor mental health. This is relevant to the study as it also highlights concepts (stress, adaptability, problem solving etc.) that are being under investigation in the study. Moreover, Goleman's theory of EI

emphasizes self-awareness, social awareness, self-management, and relationship management aptitudes, all of which are relevant for the workplace violence perpetrator-victim interaction.

Gender differences in the dynamics of workplace violence and the subsequent mental health impact would be captured from the perspective of social role theory (SRT): The differentiation of gender in workplace violence developed as a gender related theory in the 1980s (Dulin, 2008). This perspective focuses on the organization of social behaviour by examining the relations between and amongst individuals, groups, societies, and economic classifications (Dulin, 2008). This theoretical perspective posits that, historically, societal responsibilities were solely dependent on gender and it is this division of labour that engineered gender differentiated behaviour that led to socially constructed and institutionalized gender orientated societal roles (Eagly, 1987, 1997; Eagly, Wood, & Diekman, 2000; Bérés, 2011). Thus the basic hypothesis for gender in this model is that males and females, as socially constructed, are inclined to occupy different ascribed roles within social structures and are adjudged based on divergent expectations for how they ought to behave (Shimanoff, 2009). Traditionally, males, perceived to be masculine, were allocated duties that were outside the home, whilst females, perceived to be feminine, were often assigned responsibilities in the home (Eagly, 1987) and these roles were transferred to subsequent generations.

According to SRT, gender roles are affixed and structured by certain expectations that individuals must conform to (Shimanoff, 2009). Men are expected to possess agentic qualities and thus exhibit self-assuredness, dominance, and self-reliance whilst females are relegated with communal qualities indicated by being nurturing, kind, generous, helpfulness and caring for others (Dulin, 2008; and Lanaj & Hollenbeck, 2015). Males are therefore expected to be macho

whilst females are expected to be feminine, homely and subordinate (e.g. Janebova, 2007). These expectations subsequently create a societal platform where various forms of aggression and toughness are encouraged in men, whilst the opposite is expected of females (e.g. Eagly & Steffen, 1986; and Eagly & Wood, 1991; and Zhou, 2012).

The social role theoretical perspective also focuses on gender disparities in psychological processes that are fundamental to aggressive behaviour (Eagly & Steffen, 1986; Morales-Vives & Vigil-Colet, 2010). As illustrated by Murray-Close, Ostrov, Nelson, Crick and Coccaro (2010), it is thus feasible that it is also applicable to explain gender differences in workplace aggression. For instance, the influence on behaviour by social roles is reinforced through the process of socialization through parenting and the schooling system; it is therefore expected to be manifested in the working environment as employees are products of the society that creates and structures the social roles and differentiated expectations on gender behaviour. In this study, the hypothesis is that males will be found to engage in workplace violence more than females due to the males' inclination to be macho and the opposing behviour of females. This assumption is supported by several empirical studies which found that aggression is generally higher in males as compared to their female counterparts (McFarlin et al., 2001; Archer, 2004;, Dupre & Barling, 2006, Haines et al., 2006). Conferring from this theory, female employees will therefore refrain from aggressive behaviour as it is perceived to be conflicting with the behavioural expectations that are assigned to their gender and males will engage in negative behaviour as it is aligned to their societal roles as men. According to Eagly's beliefs, this is because it is the social roles themselves that influence behaviour rather than the gender itself (Dulin, 2008).

The SRT also submits that generally, society has always operated on a patriarchal system in which females are allocated lower societal status and have minimal control over resources (i.e. Eagly & Wood, 1999; Eagly, Wood, & Diekman, 2000; Makama, 2013) and men are hierarchically superior to females in almost all aspects. Although the status of females has evolved, in a working environment, this societal gender hierarchy may still cause serious conflicts, particularly when the female employee has to operate in her professional role as the superior official rather than submit to her subordinate male employee as social roles demand (e.g. a female mining engineer supervisor vs. a male junior mining inspector). In an attempt to regain his mastery, the male employee may start being impertinent and passive aggressive so as to "normalize" the situation (Eagly & Steffen, 1986) and gradually workplace violence would result.

This perspective is applicable to this study as it explains gender differences in relevance to human aggression and subsequently workplace violence. It addresses how socialization influences behaviour and in particular gender roles. Other studies, i.e. Giancola, Levinson, Corman and Holt (2009); Wimmer (2009); Weaver, Vandello, Bosson and Burnaford (2010); Warburton and Anderson (2015), also support the theory's supposition that males engage in more aggression than females. Generally, the implication of the social role theory perspective is that gender differences that exist in the social setting (home and community) tend to permeate the workplace. As a result workplace violence occurs when social roles are violated such as when women, for instance, occupy what is perceived to be traditionally gender stereotyped (male) role.

CHAPTER THREE

REVIEW OF RELATED EMPIRICAL STUDIES AND HYPOTHESES

3.1. Review of Related Empirical Studies

3.1.1. Related Studies on Workplace Aggression and Mental health

Workplace aggression tends to be used interchangeably with workplace violence and in other instances workplace violence is used as a sub-category of workplace aggression. For instance, Schat and Kelloway (2005); Buss (1961); Barling, Dupre and Kelloway (2009); Pourshaikhian, Gorji, Aryankhesal, Khorasani-Zavareh and Ahmad Barati (2016) allege that workplace violence is but a diverse type of workplace aggression that involves physical injury. However, others, such as Boyle and Wallis (2016) and Steinman (2010) suggest that workplace violence is a cohesive concept of aggression, bullying and harassment. For an example, Steinman (2010) defined the concept as a singular or cumulative incidents where employee(s) are physically assaulted or attacked; emotionally abused; pressurized; harassed or threatened (overtly, covertly, directly, indirectly) in work-related circumstances including bullying, harassment and aggression. This definition is inclusive of the repetitive aspect of both bullying and harassment and the physical and psychological aspect of all three concepts including aggression.

According to Bushman and O'Brien (2012), workplace aggression is any activity that is aimed to be detrimental to another individual who does not want to be harmed. The authors state that the aggression must be an actual behaviour and not feelings, thought, or memory, but an actual obvious behaviour, like punching or a verbal curse. Next, the aggressor must be determined and

deliberately want to harm the other individual and lastly, the harmful behaviour must be undesirable for the victim.

Workplace aggression has been associated with the prediction of poor mental health by several researchers in literature. For instance, Gillespie, Bresler, Gates and Succop's (2013) study found that workplace aggression led to disruptive symptoms of posttraumatic stress or even posttraumatic stress disorder (PTSD) amongst emergency department workers. Their research revealed that workplace aggression adversely affected the mental health of employees and that the recurrence of exposure had a direct consequence on employees' ability to effectively execute their duties. This can also be applied to the mining industry.

Traditionally, the source of workplace aggression may be divided into two subcategories namely: from co-workers and from clients. Aggression stemming from co-workers seems to have a higher impact on the mental health of victims. For an example, Merecz, Drabek and Moscika (2009) found a stronger association of psychological problems with aggression experienced from co-workers than from patients. They suggest that employee-on-employee aggression is more abusive due to regular and long term contact with the offender as each interaction is stressful and, eventually, leads to mental health disorders and stress-induced somatic symptoms. Overall, the authors found that workplace aggression, regardless of its source, was largely associated with the development of psychological problems i.e. burnout, anger, anxiety, helplessness, depression, discouragement, feeling of guilt, and decreased self-esteem.

The causal effect of workplace aggression on poor mental health was articulated by Edward, Ousey, Warelow and Lui (2014) who submitted that workplace aggression leads to physical

exhaustion, emotions of anger, being pessimistic and feeling as though one is under siege, and all these inevitably result in depression and anxiety. Consistently, when examining psychological workplace violence, specifically aggression, Barbosa, Labronici, Sarquis and Mantovani (2011) and Bernaldo-De-Quirós, Piccini and Gomez (2015) also identified an association of similar emotions such as loneliness, irritability, anger, sadness, low self-esteem, and crying with high rates of aggression which caused mental and physical disorders.

The literature also shows that workplace aggression not only affects the victim but other employees who witness the incident may also suffer mental health problems. To demonstrate the extent to which witnesses' mental health is affected by workplace aggression an example is given through Totterdel, Hershcovis, Niven, Reich and Stride's (2012) study which examined a sample of employees in a UK hospital, including nurses, doctors, specialists and administrative staff and the results revealed that when exposed to hostile interactions between co-workers, witnesses can become emotionally drained as well as experience greater psychological and physical stress.

The effect of workplace aggression on mental health was further confirmed by Barbosa, Labronici, Sarquis and Mantovani (2011) who conducted a study amongst Brazilian nurses which showed that aggression caused mental and physical disorders, loneliness, irritability, anger, sadness, low self-esteem, and crying.

3.1.2. **Related Studies on Workplace Bullying and Mental Health**

Workplace bullying can be associated with poor mental health. For example, researchers such as Hansen, Blangsted, Hansen, Søgaard, and Sjøgaard (2010), Celep and Konakli (2013),

Arcangeli, Giorgi, Ferrero, Mucci and Cupelli (2014) and Giorgi, Leon-Perez, and Arenas (2015) examined the degree to which workplace bullying affected employees' psychological health and found out that it significantly predicted stress, psychosomatic symptoms, anxiety attacks and general poor psychological health. Furthermore, Randy, Sansone, and Lori (2015) found that psychological consequences of workplace bullying may include high levels of mental distress, sleeping problems, fatigue in females and lack of energy in males, depression and anxiety, adjustment disorders, and even work-related suicide. Even though the vast research of these studies are mostly embedded in service and emergency oriented industries, especially healthcare, they are still applicable to the mining industry as it is also an environment characterized by high intensity and stress.

Other authors also found that workplace bullying affected the mental health of employees. A comparison study conducted by Hauge, Skogstad and Einarsen (2010) discovered that when compared to other occupational stressors, workplace bullying was found to be the most likely to predict anxiety and depression. This was further strengthened by Figueiredo-Ferraz, Gil-Monte and Olivares-Faúndez's (2015) longitudinal research which established a connection between workplace bullying and depression and Giorgi et al. (2016), whose results showed that experiencing workplace bullying was associated with psychological distress.

A meta-analysis on cross-sectional and longitudinal data conducted by Verkuil, Atasayi, and Molendijk (2015) also revealed that workplace bullying is consistently, and in a bi-directional manner, linked with poor mental health. The authors illustrate that, in a sample of 70 and a total of 170.233 participants, the cross-sectional data showed positive associations between workplace bullying and symptoms of depression, anxiety and stress-related psychological complaints.

To investigate how the association of workplace bullying and poor mental health develop over time, a study was conducted by Reknes et al., (2014). The study examined the prospective relationship between the experience of bullying behaviours at starting point, and increased symptoms of mental health problems (anxiety, depression, fatigue) a year after amongst members of the Norwegian Nurses Organization between the period of 2008 and 2010. Their results showed a reciprocal link between the experience of bullying behaviours and symptoms of anxiety and fatigue, respectively. According to Reknes et al., (2014), this point to a vicious circle where workplace bullying and mental health problems equally impact each other adversely. These findings are also supported by Loerbroks, Weigl, Li, Glaser, Degen and Angerer (2015) whose study examined the longitudinal relationships between workplace bullying and depressive symptoms amongst junior physicians across a 1-year follow-up and a longer follow-up period and found that although workplace bullying led to poor mental health, depressive symptoms also predicted reported workplace bullying.

Dormann and Zapf (2002) examined the period that psychological effects are likely to last and found that social stressors at work lasted up to two years on depressive symptoms. Furthermore, Nielsen and colleagues (2012) found that symptomatic distress increased two years after experiencing bullying at baseline. The latest research, however, indicates that the period might even be longer. Einarsen and Nielsen (2015), for instance, found that workplace bullying significantly predicted poor mental health 5 years on, even after controlling for baseline mental health status and other variables. This means that workplace bullying can have a long term effect on victims long after the abuse has ended and also that the longer the abuse occurs the longer the effect on the victim.

3.1.3. **Related Studies on Harassment and Mental Health**

Various researchers (e.g. Aquino & Thau, 2009; Barling, Dupré & Kelloway, 2009; Herschovis & Barling, 2010; Matthiesen & Einarsen 2010) have researched workplace harassment vastly, specifically focusing on the antecedents and consequences of the phenomenon. For example, Houle, Staff, Mortimer, Uggen and Blackstone (2011) investigated the relationship between sexual harassment and depressive affect during the early occupational career. The study, using longitudinal survey data combined with in-depth interviews, not only confirmed that harassment is a stressor that has a positive and linear relationship with depressive affect but it also found that exposure to harassment early in the career has long-term consequences for depressive symptoms into adulthood. According to these authors, harassment can augment the probabilities of anxiety, depression, and posttraumatic stress disorder and furthermore reduced self-esteem, self-confidence, and psychological well-being.

Raver and Nishii (2010) conceptualized workplace harassment as consisting of three categories, namely ethnic harassment (EH), gender harassment (GH), and generalized workplace harassment (GWH) and all of them are equally detrimental to employees' well-being including mental health symptoms. The extent to which sexual harassment predicts poor mental health was investigated by Nielsen and Nielsen (2012). A total of 1775 respondents drawn from a sample of Norwegian employees constituted participants in the study. They found that exposure to sexual harassment at baseline was associated with psychological distress. This is supported by Campos, Serafim, Custódio, da Silva and Cruz (2012) who found that workplace psychological harassment (WPH), another type of workplace harassment, is detrimental to the somatic and mental health of employees.

In a longitudinal study, Hoobler, Rospenda, Lemmon and Rosa (2010) investigated how positive and negative workplace experiences' effects on employee stress and well-being among a national sample of 1,167 employees. Part of the research outcome revealed that generalized workplace harassment (GWH) was significantly detrimental to employee well-being and that in the short-term, GWH had a more robust affect on mental health than do positive job experiences. GWH was found to be more significant and more persistent such that they also stay with workers mentally for periods longer than twelve (12) months.

Stamarski and Son Hing (2015) studied gender harassment through the practice of gender inequality in the workplace. According to these authors, gender inequality can manifest through organizational structuring, processes and practices. They suggest that organizational decision makers' levels of sexism can affect their likelihood of making gender biased HR-related decisions and/or behaving in a sexist manner while enacting HR practices. As a result this implies that the manner in which sexual harassment is dealt with maybe compromised due to this biasness. As one of the most common types of gender workplace harassment and to further advance the study of sexual harassment, Willness, Steel and Lee (2007) conducted a meta-analytic study. Their findings showed that in general, being exposed to sexual harassment seem to have an adverse influence on the psychological condition on targets. This was further elaborated by Rajoura, Kumari and Srivastava (2012) who named depression, anxiety and/or panic attacks, nightmares, shame and guilt, lack of focus, headaches, exhaustion or lack of inspiration, stomach problems, eating disorders (weight loss or gain), substance abuse, feeling betrayed and/or violated, feeling angry or violent towards the perpetrator, feeling powerless or out of control, hypertension, low confidence and self-esteem, withdrawal and isolation, overall

loss of trust in people, traumatic stress, post-traumatic stress disorder (PTSD), suicidal thoughts or attempts and suicide as some of the psychological and health effects that can occur in someone who has been sexually harassed.

Hammond, Gillen and Yen (2010) investigated the association between self-reported workplace discrimination and depressive symptoms among a multi-ethnic sample of hospital employees. It was found that African Americans had a high probability of being discriminated against more than other racial/ethnic employees and that this exposure occurred frequently to and multiple types of discrimination were used against them. Okechukwu, Souza, Davis and de Castro (2014) also concur with this as their study established that demographic marginal groups are more at risk of workplace injustice and thus undergo through more adverse outcomes such as psychological problems as compared to demographic majority groups.

Generalized Workplace Harassment has been significantly linked to mental health outcomes. For instance, the results of two studies conducted by Raver and Nishii (2010), indicated that victims' strain (i.e. job-related, psychological) and health outcomes were independently related to Ethnic Harassment, Gender Harassment and Generalized Workplace Harassment (GWH) respectively. Furthermore, Hoobler, Rospenda, Lemmon and Rosa (2010), through their within-subject longitudinal study of the effects of positive job experiences and generalized workplace harassment on well-being with a sample of 1,167 employees, found that in the case of long-term mental health, GWH surpasses the positive mental health effects of positive job experiences. This means that GWH had a higher negative impact on mental health than does positive job experiences.

3.1.4. **Related Studies on Emotional Intelligence and Mental Health**

Emotional intelligence (EI) can be associated with the quality of mental health in literature. According to Hertel, Schütz and Lammers (2009), patients with mental disorders generally suffer from lower overall emotional intelligence. They assessed emotional intelligence across a number of mental conditions such as major depressive disorder, borderline personality disorder and substance abuse disorder and found that the majority of the sample lacked the ability to regulate emotions and to comprehend emotional information.

Downey et al., (2008) also investigated the extent to which EI influenced a diagnosis of depression in a unit of adults in a clinical sample, and similar to Hertel, Schütz and Lammers (2009), their results revealed that there was substantial relativity between severity of depression and the EI dimensions of Emotional Management and Emotional Control. It also showed that measures of EI may predict poor mental health in relations to the primary identification of at risk individuals for developing depression.

Lizeretti, Costa and Gimeno-Bayón (2014) analyzed the probabilities of a link between Emotional Intelligence (EI) and personality disorders amongst 146 outpatients suffering from anxiety disorders. Their result confirmed that patients suffering from anxiety disorders present with a low EI, in particular of difficulties in emotional comprehension and regulation abilities. According to Lizeretti, Costa and Gimeno-Bayón (2014), absence of these abilities indicates high levels of anxiety and the existence of personality disorders. These findings suggest significant influence of EI on psychological well-being.

To test for a link between suicide and depression, Aradilla-Herrero, Tomás-Sábado and Gómez-Benito (2013) did a cross-sectional study of first year nursing students from a university nursing

school in Catalonia (Spain). Their analysis established that depression and emotional attention are significant antecedents of suicidal ideation. Moreover, the results showed that higher emotional attention levels are linked to heightened emotional vulnerability and an increased risk of suicide. This study indicates that emotional intelligence is a psychological factor that plays a significant role in the development of poor mental health.

Gupta and Kumar (2010) studied the relationship between mental health and emotional intelligence and self-efficacy among college students. The study was conducted amongst 200 participants (Male=100 and Female=100) in the science and arts streams of Kurukshetra University, Kurukshetra. It was revealed that mental health is definitely interrelated to Emotional Intelligence and all its related measures including self-awareness, regulating emotions, compassion, self-motivation, managing relationships and vice versa. This implies that mental health can be significantly predicted by emotional intelligence.

Fernández-Abascal and Martín-Díaz (2015) investigated if the dimensions of EI were adequate to explain various components of physical and mental health, and various categories of health-related behaviours. In a sample of 855 participants their results indicated that the EI dimensions examined were better predictors of mental health than of physical health. The EI components that positively accounted for mental health were well-being, self-control and sociability, and negatively, attention. These findings reinforce studies conducted by researchers such as Martins Ramalho and Morin (2010) which emphasize the importance of EI in the improvement of psychological and physical health.

In a research that investigated the link between emotional intelligence (EI) and post-traumatic stress disorder (PTSD) on a sample of Georgian internally displaced persons (a group which was

exposed to potentially traumatic events), Martskvishvili (2015) reported that the trait EI global score predicted PTSD amongst a sample of 200 respondents. Contrary to Martskvishvili (2015), Kelly, Scott, and Byron (2014) found that emotional intelligence was not positively associated with symptoms of PTSD; instead maladaptive coping was the strongest predictor. Other researches, however, reinforce the significance of emotional intelligence in the development of PTSD. Hofman, Hahn, Tirabassi, and Gaher (2016), for instance, found that emotional intelligence is significantly associated with PTSD symptoms and similarly, Ghazali (2014) found that individuals with severe PTSD symptoms were not capable of understanding and using their emotions, suggesting that, indeed, emotional intelligence does play a role in the mental health of individuals.

In an experiment to study the influence of emotional intelligence on the mental health of students in Islamic Azad University of Saveh with respect to the mediating role of self-efficiency, Golnezhad (2015) proved that emotional intelligence does have an effect on mental health considering the mediating role of self-efficiency. This demonstrates that emotional intelligence is a factor that can predict or rather moderate for psychological well-being.

3.1.5. **Related Studies on Gender and Mental Health**

Gender variances in the prevalence and types of mental health problems are well documented. Kvrgic et al. (2013) is one of the studies that examined gender differences in mental health status. The study, which was conducted in the Province of Vojvodina, in Serbia, revealed that females were more susceptible to poor mental health as compared to their male counterparts. According to the authors, the results correspond with the fact that, as compared to males, women

tend to experience more stressful and emotional situations and rather frequently experience undesirable conditions and thus they would report more negative patterns of mental health.

To further explore the relation between gender and mental health, Ryba and Hopko (2012) investigated gender differences within thirteen behavioural areas. In their findings, females focused in the domains of health/hygiene, spiritual activities, and sharing their meals with others whilst males were more focused in physical activity, sexual activity, and pastimes and leisure experiences. This experiment showed that gender did have a substantial direct outcome on depression severity, with females showing higher depression levels than males.

In an effort to establish differentiation between males and females regarding type of mental problems, Karger (2014) conducted a review which indicated that females tended to be diagnosed with comorbid anxiety and that they had depression twice at the rate of males, whilst males exhibited comorbid alcohol abuse higher than females. The review also showed that men were more likely to commit suicide at a rate between three and five times higher when matched with women. This review is reinforced by the findings of the research conducted by Schuch, Roest, Nolen, Penninx and de Jonge (2014) which demonstrated that women suffered more from recurrent major depressive disorder, a higher comorbidity of panic disorder with agoraphobia and long term anxiety disorder than men, whereas men experience comorbid alcohol dependence or abuse more.

Similar to previous authors, Olff (2017) also states that females are more susceptible to psychological problems than males. For instance, the author states that females are three times more likely to develop post-traumatic stress disorder (PTSD) compared to their male

counterparts. In agreement with Kvrgic et al. (2013), Olff (2017) states that this discrepancy is because the two genders are exposed to different forms of trauma, both in their private and public life which is also supported by Van der Meer et al. (2017), and women tend to be targets of traumatic incidents more (e.g. sexual trauma/workplace sexual harassment) than men, hence their vulnerability to psychological problems.

Almuneef, ElChoueiry, Saleheen and Al-Eissa (2017), using a cross sectional national study in the Kingdom of Saudi Arabia, investigated the extent to which gender differences in the types of reported adverse childhood experiences would affect physical and mental health in adulthood. Their results indicated that men who had experienced 4 types of childhood adversity were associated with an increased chance of using drugs and drinking alcohol. Meanwhile, women with a history of the same number of childhood adversity were associated with depression, anxiety and other mental illnesses.

From previous research (Forlani et al., 2014; Crum-Cianflone & Isabel Jacobson, 2014; etc.) consensus appears to be that women are twice as more likely to develop poor mental health than men. Other researchers (Schuch, Roest, Nolen, Penninx and de Jonge, 2014; Almuneef, ElChoueiry, Saleheen and Al-Eissa, 2017) have, however, demonstrated that gender variance becomes apparent when different types of psychological problems are presented. Looking at current literature, though, one cannot deny that gender differences do play a major role in the development of poor mental health.

3.1.6. **Related Studies on Personality and Mental Health**

Salehinezhad (2012) states that the manner in which we process our thoughts, emotions and we behave as well as our unique distinctiveness substantially affects our mental health, in particular our psychopathology. According to Hampson and Friedman (2008), certain persons have a higher susceptibility to mental illness and psychopathology based on their characteristics and personal qualities. For example, in a cross-sectional study, Amini, Heidary and Daneshparvar (2015) examined personality trait and its effect on the mental health of abused women in Tehran. They found that statistically mental health had a significant and positive correlation with the neuroticism personality trait.

Sadeghi, Ofoghi and Azizi (2015) shed more light on the effects of personality on mental health by investigating the relationship between students' personality characteristics and mental health at the University of Guilan. Their results revealed that there was a link between personality characteristics of neurotic, openness, extraversion and being conscionable with mental health. Additionally, openness was found to have the highest and extraversion with the lowest correlation scale and most of the students (65%) had low mental health.

Wehner, Schils and Borghans (2016) examined the extent to which conscientiousness would moderate the relationship between low emotional stability and psychological well-being both theoretically and empirically. The authors found that more conscientiousness significantly moderates the negative correlation between low emotional stability and mental health. This suggests that the personality trait, conscientiousness, is an important factor in determining psychological well-being, further confirming that personality forms a fundamental basis for mental health.

In a large-scale clinical study involving 1970 Chinese Han women diagnosed with persistent major depression from Beijng, Shanghai, Tianjin and Chongqing (Asia), Xia et al. (2011) investigated the extent to which personality trait of neuroticism is a risk factor for major depressive disorder (MDD). Their result indicated that patients who exhibited increased intensities of neuroticism were prone to increased risk for a lifespan of MDD and to the comorbidity of MDD with anxiety disorders. High levels of neuroticism were also found to significantly predict the onset and severity of MDD.

To assess the mediating role of personality characteristics between childhood adversity and a 4 year progression of depressive and anxiety disorders, Hovens, Giltay, van Hemert and Penninx (2015) conducted a longitudinal study which showed that increased neuroticism, hopelessness, external locus of control, and low levels of extraversion moderated the relationship between childhood maltreatment and 4-year diminution of depressive and anxiety disorders. These results suggest that personality make up plays a significant role in the diagnosis and prevention of poor mental health.

The influence of extraversion on psychological wellbeing was studied by Gale, Booth, Mõttus, Kuh, and Deary (2013) by testing the impact of neuroticism and extraversion at ages 16 and 26 years on the mental wellbeing and life satisfaction at age 60-64. Their results indicated that extraversion had direct, positive effects on both measures of wellbeing (psychological and physical health). This study is in support of earlier studies such as that of De Neve and Cooper (1998) which found that individuals who are optimistic and extraverted tended to evade unnecessary stress and thus tended to be more content than those who are pessimistic, introverted, and prone to worry.

Most personality studies largely associate their dimensions with poor mental health. For an example, Srivastava and Das (2015) state that personality is largely associated with mental health through neuroticism which is perceived to persistently predict imminent psychopathology including several other mental disorders. Mirnics et al. (2013) did a study which revealed that personality measurements of extraversion, conscientiousness and emotional stability had robust predictive values of acute psychopathology. Moosavi, Ghotnian and Torabzadeh (2012) conducted a study on personality which indicated that extraversion and mental irritation orientation scored up to 48% of mental health. This shows that there is a gap in research studies which examine personality as a factor of positive mental health. Future studies should consider expanding this area of knowledge.

3.1.7. **Related Studies on Aggression and Emotional Intelligence**

Garcıa-Sancho, Salguero and Fernandez-Berrocal (2017) have stated that emotional intelligence (EI) has been connected to a number of psychosocial adjustment indicators as well as aggressive behaviour. To test this hypothesis the authors employed the use of a cross-sectional and longitudinal design to examine the relationship between ability emotional intelligence (AEI) and aggression in both adults and juveniles. The authors submitted that AEI predicted physical aggression over time, but it did not predict verbal aggression as indicated by their results.

To examine the role of emotional intelligence on aggression, Prangya Paramita Priyadarshini Das (2015) tested the effect of emotional intelligence on adolescents' aggression as well as the gender variances that this test would produce. Their results revealed that there exists a significant difference between the levels of emotional intelligences (High Emotional Intelligence, Medium Emotional Intelligence & Low Emotional Intelligence) on aggression of adolescent girls as

compared to adolescent boys. Boys were found to be more aggressive whereas girls were found to be more emotionally intelligent.

Coccaro, Solis, Fanning and Lee (2015) examined the relationship between emotional intelligence and impulsive aggression and the finding was that the trait of understanding and managing emotions was decreased in subjects with intermittent explosive disorder compared with both healthy and psychiatric controls. The results also showed that increased aggression (and impulsive) was proportional to a subject's lower understanding of emotional information and how to use it strategically for planning and self-management (Strategic EI).

In a study that was comprised of 202 subjects, including 101 convicted offenders, Sharma, Prakash, Sengar, Chaudhury and Singh (2015) examined the link between emotional intelligence and felonious behaviour involving murder, rape, and robbery. The results revealed that the criminal group significantly achieved lower scores in intrapersonal awareness (own emotions), interpersonal awareness (others emotions), intrapersonal management (own emotions) and interpersonal management (others emotions), and aggregate emotional quotient in comparison to their normal counterparts, meaning that they obtained overall low points on the Mangal Emotional Intelligence Inventory (MEII). These results confirm the hypothesis that emotional intelligence is a risk factor in regards to aggressive behaviour.

In a contrast, comparison study, Jaleel and Verghis (2017) explored the relationship between emotional intelligence and aggression among teacher trainees at secondary level. The findings revealed that, almost half of the sample scored high on aggression, the outcome indicated no significant implication of emotional intelligence on aggression.

The vast majority of literature appears to agree that emotional intelligence does have a significant influence on aggression. For an example, a meta-analysis study, in respect of aggression and emotional competence, conducted by Dana-Maria (2017) revealed that in the absence of emotional intelligence, an employee can experience low levels of self-control and counterproductive work behaviour (CWB) such as aggressiveness may arise. Throughout literature it is clear that aggression tends to be accompanied by lower levels of emotional intelligence. This confirms the significant relationship that undeniably exists between these two variables.

3.1.8. **Related Studies on Harassment and Emotional Intelligence**

The impact of emotional intelligence (EI) on workplace behaviour of employees, including those behaviours which are counterproductive in the workplace, cannot be denied. For instance, Essien and Iroegbu, analyzed theoretical and empirical studies that focused on emotional intelligence concerning occupational interpersonal stressors such as sexual harassment and bullying. Their findings posit that low emotional intelligence is unequivocally the root of sexual harassment and bullying. It also suggests that low emotional intelligence reproduces more aggressive behaviour among employee and thus increasing stress levels which further predisposes employees to substitute attack responses among other counterproductive behaviours.

It is widely accepted that regulating one's emotions towards unpleasant workplace interactions diminishes the workplace aggression–strain link. For instance, Stemmler (1997) suggested that encouraging participants to interpret verbal harassment in a more detached, nonthreatening way decreased physiological arousal to that stimulus. However, according to Reyes, Espinosa and Romero (2017), although emotional regulation may help in alleviating the effects of harassment

it is not as easy to achieve in the face of harassment at work. According to the authors, during the interaction of harassme, emotional repression in the victims occurs disabling the victims to manage their emotions, and instead, feelings such as anger, dread, vulnerability and defeat are some of the emotions that surface.

3.1.9. **Related Studies on Bullying and Emotional Intelligence**

Emotional intelligence is the ability to perceive, express and understand emotions and to be able to regulate them in ourselves and in others (Cabello and Fernández-Berrocal, 2015; Yunus, Ghazali & Hassan 2011). This psychological concept has been implicated as a factor in the different types of workplace bullying (Hutchinson, 2013) as a component of workplace violence. According to Hutchinson and Hurley (2013) a higher EI is necessary for a positive work setting as well as for moderating conflict in the workplace. In this regard perpetrators of workplace violence may possess a high social intelligence and a low emotional intelligence (EI) which enables them to rationalize negative behaviours and influence others to be accepting of the bullying tendencies (Hutchinson, 2013).

In contrast, when Pilch (2008) compared individuals who were high to those who were low in Machiavellianism, which is a personality trait for bullies, those who were high in Machiavellianism were more characterized by a higher emotional intelligence. Thus, emotional intelligence may not necessarily be an influential factor for the moderation of conflict in the workplace as indicated by Hutchinson and Hurley (2013). Low EI has also been associated with being a target of workplace violence. Branchl and Murray`s (2012) study, for instance, revealed that victims tended to have a considerably lower ability to manage their emotions. When examining for the moderating effect of EI on the impact of workplace bullying, Ashraf and Khan

(2014) found that employees with a higher EI showed less negative outcomes as compared to those that had a lower EI. Giorgi et al. (2016)'s findings, though, indicate that it is the exposure to workplace bullying that may actually be the cause of a low EI through the psychological distress that comes with being violated rather than a personal trait of the victims per se.

The vast body of research in general (e.g. Buitenhuis, 2015; Adams & Webster, 2013; Karim, 2009; Westerlaken, Jordan, Ramsay & Woods, 2009) and those reviewed in this study indicate a significant relationship between emotional intelligence and workplace violence. Others argue that EI can be a precursor of workplace violence (Branchl & Murray, 2012), whereas some (Giorgi et al., 2016; Giorgi & Majer, 2009) posit that a poor EI is as a consequence of workplace violence. The role of EI with regard to engaging in workplace violence also seems to be blurred in the literature. Others such as Hutchinson and Hurley (2013) suggest that perpetrators are low in EI while Pilch (2008) shows committers' characteristics to be linked with a high EI. Irrespective of the ambiguity of its role in the dynamics of workplace violence, it cannot be disputed that emotional intelligence is a significant factor vis-à-vis the occurrence and outcomes of workplace violence.

Giorgi et al. (2016) analyzed a link of workplace bullying, psychological distress and the self-management competence of emotional intelligence. Their findings suggest that, not only may emotional intelligence moderate the experience of bullying incidents; the bullying itself can alternatively hinder emotional intelligence by causing psychological distress. With regard to the emotional intelligence of perpetrators, Namie (2003) posits that it is the emotionally unintelligent perpetrators who engage in tyrannical misconduct because they feel threatened by targets' asserted independence and thus react in negative behaviours.

The emotional intelligence of targets and whether that can determine workplace bullying was investigated by Himmer (2016). Unlike some studies, Himmer (2016) found that evidence of the study showed no support that emotional intelligence or its principal dynamics from the victim's perspective can predict workplace bullying.

3.1.10. **Related Studies on Aggression and Personality**

In literature, it has been argued that certain personality types are more disposed to negative behaviours than others. Whitehead (2015), for example, states that personality traits can determine the propensity of an individual to transgress against others in the workplace. Whitehead (2015) gave an example of a person lacking patience for other's opposing views. According to this author, such a person might be easily infuriated by these opposing views to an extent that he loses patience and thus be driven to aggression.

Regarding the victim's personality, previous research alludes to the fact that targets of workplace violence often exhibit certain traits that are also apparent in perpetrators. Hershcovis and Reich (2013) have suggested that personalities of victims lean towards that of the perpetrators. For instance, Linton and Power (2013) studied the extent to which both perpetrators and their targets possess workplace violence personifying traits, with a 22-item scale that concurrently measures committers and targets of negative workplace acts. The results indicated that targets' behaviours categorically associated with perpetrator personifying traits such as Machiavellianism, narcissism, psychoticism, and aggression.

Cavalcanti and Pimentel (2016) tested for a direct and indirect correlation between personality traits on aggression and established that a substantial positive relationship between neuroticism

and physical aggression as well as aggressive emotions existed. Accordingly, individuals with high scores on neuroticism were considered more likely to exhibit aggressive emotions and aggressive behaviour. The opposite was established for agreeableness and physical aggression, meaning that increased agreeableness predicted lower scores for aggression. In contrast, Barlett and Anderson (2012) found that agreeableness was one of the five traits of personality that were directly and indirectly related to physical aggression.

Jones, Miller and Lynam (2011) examined the dynamics of the Five-Factor Model of personality and their association with antisocial and aggressive behaviours. Compared with other studies, agreeableness, conscientiousness, and neuroticism were found to be the most consistent in regard to aggression. Neuroticism resulted in hostility, agreeableness led to straightforwardness and compliance, whilst altruism correlated with conscientiousness. The moderating influence was tested by Taylor and Kluemper (2012) who investigated the process through which employee reactions to workplace stressors increase over time into more intense responses. The study scrutinized the stimulus effect of personality traits (neuroticism, agreeableness, conscientiousness) to employees' aggressive behaviour. The findings indicated that personality did indeed mediate the variables showing that aggression through experienced incivility was dependent on individual differences in personality.

3.1.11. **Related Studies on Harassment and Personality**

Astrauskaite and Kern (2011) evaluated the crescendos of workplace harassment and personality through a demographic survey administered to a sample of 320 employees from different institutions in Lithuania. The study confirmed that personal attributes such as taking charge, wanting recognition, and being cautious were connected to the experience of work harassment.

Amongst a sample of 148 male and 278 female college students, the mediating effects of personality regarding to harassment were tested by Ménard, Shoss and Pincus (2010). The researchers assessed a trait model of personality (Five-Factor Model) as a mediator between attachment styles and sexually harassing behaviour. Their results showed that males who had a low agreeableness quality tended to engage sexual harassment behaviours including gender harassment, unwanted sexual attention, and sexual coercion. Conscientiousness was also found to predict overall sexual harassment, gender harassment, and unwanted sexual attention. This study further cemented the hypothesis that personality traits are a mediating factor for sexually harassing activities.

Zeigler-Hill, Besser, Morag and Campbell (2016) investigated the influence of the popular "Dark Triad" of personality traits (i.e., narcissism, psychopathy, and Machiavellianism) on sexual harassment tendencies through a longitudinal study amongst 2551 in an Israeli community. At first phase the results exposed that the Dark Triad trait is significantly correlated to sexual harassment predispositions. Accordingly, the second phase results appeared indicating that, not only does the Dark Triad trait significantly relate to sexual harassment inclinations, each one of them had an exceptional positive correlation with the proclivity to engage in sexual harassment.

3.1.12. **Related Studies on Bullying and Personality**

Additional, Perminiene, Kern and Perminas (2016) found that individuals characterized being rule-focused, domineering and controlling and those that are more are at a higher risk of workplace bullying. This is consistent with the findings of other studies such as Hershcovis, Reich and Niven (2015), WBI (2014), Kim and Glomb (2010) and Lind, Glaso, Pallesen and

Einarsen (2009). Literature is abounding with studies on the significant relationship between personality dynamics and the workplace victimization.

In an empirical study, Linton and Power (2012) observed the extent to which both workplace bullying perpetrators and targets have bully-typifying traits. Linton and Power (2012) drew a sample size of 224 Canadian university students aged 18–47 with prior work experience. In their findings both groups correlated positively with Machiavellianism, narcissism, psychoticism, aggression, and disinhibition measures.

Deniz and Gullen Ertosun (2010), also in an attempt to establish an association between personality and bullying, investigated the personalities of employees who were being exposed to workplace incivility. Their cross sectional survey found it was possible for personality to act as an antecedent for exposure to workplace bullying. Studies about personality of victims' found different results but they assess from different aspects as well.

Persson et al. (2009) went further and included individuals who witness bullying as it occurs in their study of personalities bullying. They established three groups which were named as the bullied, witnesses and non-bullied respondents. Victims showed increased scores on neuroticism, irritability (aggressiveness dimension) and impulsiveness scores (extraversion dimension) compared to non-victims. This suggests that displaying oneself as mistrusting and with embitterment as well as irritability and impulsiveness can render one vulnerable to bullying.

Consistently, Balduccia, Fraccarolib and Schaufeli (2011), using a work stress theory, examined a comprehensive model of bullying in which work environmental and personality factors are conjectured as antecedents of bullying and post-traumatic stress symptoms. The authors were

able to confirm their hypothesis that personality and work environmental factors were individually interrelated to bullying, and thus suggesting that both work environmental and personality factors can trigger the occurrence of workplace bullying.

3.2. Hypotheses

1. There will be significant correlations among the variables of study
2. Emotional intelligence and each of the Big-Five personality traits will mediate the influence of workplace bullying, workplace aggression, and workplace harassment on the mental health of mine workers
3. There will be significant group differences in mental health as a function of ethnic group affiliation
4. There will be significant group differences in mental health as a function of economic status
5. There will be significant group differences in mental health as a function of educational level
6. There will be significant group differences in mental health as a function of job position
7. There will be significant gender difference in mental health
8. There will be significant difference in place of residence and mental health

CHAPTER FOUR

RESEARCH METHODOLOGY

The modalities (steps, techniques, and procedures) employed in executing this research are discussed in this chapter. This thesis is based on a cross-sectional design anchored on a mediation model approach. Seven sections were contained therein. These include research design, research setting, participants, instruments, procedure, statistical analysis and ethical considerations. Each of the sections were subsequently discussed as follows, using APA format.

4.1 Research design

This study employed a mediation model approach. Independent variable is work place Violence (WPV) measured as work place aggression (WPA), work place bullying (WPB) and work place harassment (WPH). The mediation variables were personality and EI. The dependent variable was mental health. Therefore, this model proposed that WPV (aggression, bullying and harassment) will directly lead to mental health of miners. It was also predicted that WPV (aggression, bullying and harassment) factors will correlate and in addition predict emotional intelligence and personality and that EI and personality will mediate the relationship between WPV and mental health of miners. Other independent variables are occupational level and gender. As a result, a structural equation model (SEM) was used to understand the pathways of the independent, mediation and dependent variables. Structural Equation Modelling (SEM, also called covariance structure analysis) is designed, in part, to test the complicated regression equations involved in mediation analysis in a single analysis instead of testing separate regression analyses. Measurement error is a potential biasing effect in mediation testing because

of attenuation of relationships and the SEM approach can help to remove the measurement error from the estimation of the relationships among the variables. In addition, the SEM analysis approach provided model fit information that provides information about the correctness of the proposed mediation model to the data. Dependent variable in this study is mental health measured by total score of each respondent on the General Health Questionnaire 28 developed by Goldberg (1978).

4.2 Research Setting

The study setting is the mining industry in the Northwest province of South Africa. Northwest province has the largest concentration of mines in South Africa. The Department of Minerals and identified organisations were consulted for permission to recruit employees prior to the undertaking of the study. The purposes and aims of the study were thoroughly explained and management were assured of the anonymous use of attained data for research purposes.

4.3 Sampling

Participants in the present study were one thousand, five hundred and eighty three (1583 miners) purposely recruited from forty three (43) mines/hostels located in fifteen areas of the North West Province of South Africa. The miners were from the following areas: Christiana, Bloemhof, Lichtenburg, Klerksdorp, Schweizer-Renke, Ventersdorp, Koster, Vryburg, Potchefstroom, Brits, Rustenburg, Bafokeng, Mankwe, Pilanesburg and Marico District (see appendix X or/and X). Participants' cuts across all cadres of employees: labourers, administrative staff, middle management and senior managers. For ethical reasons, the names of the mines are omitted.

Selection was based on statistical official Miners population. The industry has 168 430 (33%) employees who make up the largest of the country's mining sector employment. Sample size was calculated using the Krejcie and Morgan (1970) formula:

$s = \chi^2 NP\ (1- P) \div d2\ (N -1) + X\ 2P\ (1- P)$.

s = required sample size.

χ^2 = table value of chi-square @ 1 for desired confidence level (3.841).

N = the population size (168430)

P = the population proportion (assumed to be .50).

d = the degree of accuracy expressed as a proportion (.05).

$$\text{Size} = \frac{\chi^2\ NP\ (1\text{-}P)}{d^2\ (N\text{-}1) + X^2 P\ (1\text{-}P)}$$

$$\text{Size} = \frac{14.8 \times 168430 \times .50\ (1\text{-}.50)}{0.0025\ (168430\text{-}1) + 14.8 \times .50\ (1\text{-}.50)}$$

$$\text{Size} = \frac{623191}{424.8} = \text{Sample Size} = 1467.02 \text{ (rounded off to 1500).}$$

Meanwhile, 1700 questionnaires were administered and eventually 1583 were properly filled and fit for analysis. All cases with missing values were excluded from the final analysis. Participants has a minimum of primary education and were able to interact in the English Language.

4.4 Participants

The study participants consist of 1583 mineworkers (1287 males, 296 females) purposively drawn from mine industry in Northwest province. The participants' ages ranged from 19 to 62

years (Median age = 35 years, *SD* = 9.48). In terms of racial composition of the participants, 1523 (96.2%) were blacks, 49 (3.1%) were whites, and 11 (.7%) were coloured. Regarding occupational level, 694 (43.8%) of the participants were labourers, 553 (34.9%) were lower level employees, 222 (14.0%) were junior management staff, 82 (5.2%) belongs to middle management cadre, and 32 (2.0%) were of senior management category. Furthermore, 328 (20.7%) of the participants reside in rural areas while 1255 (79.3%) in urban arears. Assessment of the participants' economic status showed that 430 (27.2%) rated themselves as poor, 422 (26.7%) rated themselves as below average economic status, 629 (39.7%) rated themselves as belonging to average economic status, 92 (5.8%) described themselves as belonging to above-average economic status, and 10 (.6%) rated themselves as belonging to the affluent class. In terms of educational level, 441 (27.9%) had standard 9 or lower, 894 (56.5%) had standard 10 (matric), 159 (10.0%) had post-matric diploma/certificate, 77 (4.9%) had baccalaureate degree and 12 (.8%) participants had postgraduate degrees.

4.5 Instruments

Data were collected using a questionnaire (survey) with five sections: A, B, C, D and E.

Section A: This was comprised of demographic attributes and other social variables such as age, gender, race, place of residence, educational level, and occupational level. Sections B, C, D, and E measured workplace violence, personality, Emotional intelligence, and General Health.

Section B: **Workplace Violence**

Bullying Scale: The Negative Acts Questionnaire Revised (NAQ-R) is a 22-item, subjective self-report research inventory developed for measuring perceived exposure to bullying and victimisation within the last six month (Einarsen, Hoel & Notelaers, 2009). Sample items

include "Someone withholding information which affects your performance", "Being humiliated or ridiculed in connection with your work", "Threats of violence or physical abuse or actual abuse" etc. The response categories range from 1(never) to 5 (daily) and were measured using a Likert response format. Individual scores were derived by summing the responses to all the 22 items on the scale with high scores indicating high perceived bullying and vice versa. The authors reported that NAQ-R correlated very well with measures of mental health, psychosocial work environment, and leadership indicating a good construct validity. The authors also reported a Cronbach's Alpha of .90 (Einarsen, Hoel & Notelaers, 2009). In this study, a Cronbach's Alpha of .88 was found for NAQ-R.

Harassment scale: The Work Harassment Scale (WHS) developed by Björkqvist and Österman (1992), was used to assess variable work harassment (Björkqvist, Österman & Hjelt-Back, 1994). The scale consists of 24 items with responses such as: never, seldom, occasionally, often, and very often. The instruction was for participants to indicate how frequently they had experienced each of these behaviours over the past 6 months using a 5-point (0 = Never, 1 = Seldom, 2 = occasionally, 3 = often, 4 = very often) Likert scale format. Sample items on the harassment scale include: "unduly reduced opportunities to express self", "being isolated", "being unduly disrupted", "being sneered at", "refusal to speak with you" etc. All items on the harassment scale were summed together to get individual score with high score indicating high harassment and vice versa. The reliability and validity of work harassment scale is variously reported by different authors in the literature. Lee, Kim, Shin, and Lee reported a Cronbach's Alpha of .93 for the scale and 100% rate of discriminant validity among Koren Finance and service workers. In another separate study, Báguena, Beleña, Toldos and Martínez reported a Conbach's Alpha of

.97, an indicator of a very high reliability. A Cronbach's Alpha of .91 was found as the scale in the present sample.

Workplace Aggression Scale: Aggression was measured using the Aggressive Experiences Scale (AES) developed by researchers from the State University of New York in New Paltz (quoted in the New York Times, 25th March, 2008), consisting of 20 items which measure: Physical Aggression, Verbal Aggression, Anger and Hostility. Participants responded on behaviours they had experienced over the last 6 months. It uses a five-point response scale (1 "Never" to 5 "Once a week or more"). The psychometric properties of the scale were not reported by the original authors. In the present study a Cronbach Alpha of .92 was found for the current sample.

Section C: Personality Scale

Personality was measured using the Big Five Inventory 10 scale which was developed by Rammstedt and John (2007). The Big Five Inventory (BFI-44) was abbreviated to a 10-item version, the BFI-10 and is rated on a 5-step scale from 1D "disagree strongly" to 5D "agree strongly". Sample items include: "I see myself as someone who is reserved", "I see myself as someone who gets nervous easily", "I see myself as someone who has active imagination" etc. The author reported adequate levels of reliability and validity for the scale using retest reliability, structural validity, convergent validity (Rammstedt & John, 2007). Sufficient reliability was also found for the scale in this study.

Section D: Emotional Intelligence Scale

The emotional intelligence scale was developed by Schutte et al (1998). The 33-item Likert-type measure has been shown to have good internal consistency and test retest reliability. Response

format ranges from 1 (strongly disagree) to 5 (strongly agree). Sample items include "I know when to speak about my personal problems to others", "I am aware of my emotions as I experience them", "When I am in a positive mood, I am able to come up with new ideas", "I can tell how people are feeling by listening to the tone of their voice". An internal consistency analysis showed a Cronbach's alpha of 0.90 for the 33-item scale (Schutte et al., 1998). The scale requires a reading level typical of fifth graders. A Cronbach's Alpha of .93 was found for the scale in this study.

Section E: The mental health scale, GHQ-28:

The General Health Questionnaire 28 item version (GHQ- 28) was developed by Goldberg and Hillier in 1979 based on the GHQ- 60. Respondents were asked to compare recent psychological state with the usual state. All items have a 4 point scoring system using Likert scoring (0-1-2-3). The scale has 4 subscales: somatic symptoms (items 1-7); anxiety/insomnia (items 8-14); social dysfunction (items 15-21) and severe depression (items 22-28). The reliability of this scale was measured by Cronbach alpha and construct validity was evaluated by factorial analysis (Vallejo, Jordán, Díaz, Comeche, & Ortega, 2007). The item response is scored according to categories with values of 1, 2, 3, 4, 5, 6 and 7. The questions were framed in such a way that about half of the total number of statements, very much, moderately, slightly, indicated negative attitude to the left, and thus assigned scale values of 1, 2, and 3 while 4 served as neutral or both adjectives apply equally. The other half of the scales fell to the right indicating positive attitude such as slightly, moderately and very much, and thus will be assigned scale values of 5, 6, and 7 respectively.

4.6 Procedure

Data were collected using self-administered, self-reporting questionnaires in English language. Willing participants were provided with the questionnaire, a method that allows for a faster pace of data collection. As a result of the crises in the mining industry at the data collection, questionnaires were distributed to mine workers through their union branches. Distribution of questionnaires to senior and management employees was however carried out on site/offices. Respondents were given a detailed description of the purpose of the study and assured of the confidentiality of their responses before undertaking to partaking in the study. Informed consent forms were handed out to respondents after a thorough explanation of its purpose. Questionnaire administration took approximately three (3) months.

4.7 Data Analysis

SPSS version 17 was employed for statistical analysis. Data were characterized using descriptive methods. Pearson Moment Correlation Coefficient was used to test hypothesis one. Structural Equation Modelling (SEM) was used to test hypothesis Two. Independent t-test and One-way ANOVA were used to test hypothesis three to seven.

4.8 Ethical considerations

Fair and ethical standards were implemented for this research. Participation was voluntary and informed consent was solicited prior to participation. Ethical principles such as doing no harm, confidentiality and privacy were strictly observed. The researcher obtained approval for the research from the ethics committee of the Northwest University, Mafikeng campus. The researchers provided psychological assistance and referred, where necessary, employees who exhibited psychological reactions to the sensitive aspects of the study.

CHAPTER FIVE

RESULTS

This section reports the findings of the study including the results of intercorrelations among the study varibles are highlighted. Thereafter the hypothesised model for all the variables for the SEM model within the correlations result is presented. Then the SEM results are presented and their regression weights are outlined. Furthermore, the outcome of the t-tests and ANOVA are also outlined. All the results in this study are presented in the form of tables and figures.

Hypotheses Testing

Hypothesis 1

Hypothesis 1 proposed that there will be significant correlations among the variables of study. The results are shown in Table 5.1.

The results revealed that workplace bullying was significantly and positively correlated with mental health ($r = .16$, $p < .01$), workplace harassment was significantly and positively correlated with mental health ($r = .26$, $p < .01$), conscientiousness was significantly and positively correlated with mental health ($r = .13$, $p < .01$), neuroticism was significantly and positively correlated with mental health ($r = .13$, $p < .01$), and age was significantly and positively correlated with mental health ($r = .19$, $p < .01$), respectively. Also, workplace aggression was significantly and negatively related with mental health ($r = -.12$, $p < .01$), emotional intelligence was significantly and negatively related with mental health ($r = -.31$, $p < .01$), openness to experience was significantly and negatively related with mental health ($r = -.07$, $p < .01$), and extroversion was significantly and negatively related with mental health ($r = -.15$, $p < .01$), respectively.

Table 5.1: Inter-Correlations among the measured variables (n = 1583)

Variables	1	2	3	4	5	6	7	8	9	10	11
1. Mental Health	1										
2.Workplace Bullying	.16**	1									
3.Workplace Harassment	.26**	.83**	1								
4.Workplace Aggression	-.12**	-.53**	-.64**	1							
5.Emotional intelligence	-.31**	-.07**	-.14**	.06*	1						
6. Openness	-.07**	.04	.01	.03	.47**	1					
7. Conscientiousness	.13**	.18**	.08**	-.05*	.11**	.32**	1				
8. Extroversion	-.15**	-.08**	-.09**	.06*	.43**	.44**	.40**	1			
9. Agreeableness	-.04	-.01	.03	.01	.43**	.58**	.20**	.45**	1		
10.Neuroticism	.13**	.03	.04	-.00	.18**	.45**	.51**	.41**	.35**	1	
11. Age	.19**	-.07**	-.02	.07**	-.12**	-.06*	-.07**	-.12**	-.08**	-.08**	1
Mean	19.19	11.32	10.12	107.62	120.19	7.17	6.07	6. 75	6.78	6.21	35.02
SD	10.09	10.99	11.85	17.81	22.03	1.98	1.78	2.19	2.21	1.69	11.37
Range	63.00	60.00	65.00	99.00	132.00	8.00	8.00	8.00	8.00	8.00	
Skewness	.01	1.83	1.92	-.92	-1.16	-.17	.06	-.49	-.21	-.19	
Kurtosis	.-27	3.98	3.97	1.38	1.44	-.97	.63	-.52	-.84	-.24	

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

The results further indicated that workplace bullying was significantly and positively correlated with workplace harassment ($r = .83$, $p < .01$), and conscientiousness ($r = .18$, $p < .01$), respectively. In contrast, workplace bullying was significantly and negatively related with workplace aggression ($r = -.53$, $p < .01$), emotional intelligence ($r = -.07$, $p < .01$), extroversion ($r = -.08$, $p < .01$), and age ($r = -.07$, $p < .01$), respectively.

The results showed that workplace harassment was significantly and negatively correlated with workplace aggression ($r = -.64$, $p < .01$), emotional intelligence ($r = -.14$, $p < .01$), and extroversion ($r = -.09$, $p < .01$), respectively. Also, workplace harassment was significantly and positively related with conscientiousness ($r = .08$, $p < .01$) respectively. Workplace aggression was significantly and positively related with emotional intelligence ($r = .06$, $p < .01$) and extroversion ($r = .06$, $p < .01$), respectively. In contrast, workplace aggression was significantly and negatively correlated with conscientiousness ($r = -.05$, $p < .01$) respectively.

Emotional intelligence was significantly and positively related with openness to experience ($r = .47$, $p < .01$), conscientiousness ($r = .11$, $p < .01$), extroversion ($r = .43$, $p < .01$), agreeableness ($r = .43$, $p < .01$), and neuroticism ($r = .18$, $p < .01$) respectively. There was a significant negative relationship between emotional intelligence and age ($r = -.12$, $p < .01$).

Hypothesis Two

Hypothesis 2 proposed that emotional intelligence and each of the Big-Five personality traits will mediate the influence of workplace bullying, workplace aggression, and workplace harassment on mental health of mine workers. To test this hypothesis, a structural equation modelling in AMOS was used to explore the mediating roles of emotional intelligence and each of the Big-

Five personality traits in the relationship of workplace bullying, workplace aggression, and workplace harassment on mental health of mine workers.

The mediation hypothesis proposes a causal relationship between variables of study, in which the independent variables are hypothesized to influence a second variable (the mediator) that, in turn, influence a third variable (the dependent variable). Baron and Kenny (1986) specified the basic approach to testing for evidence of mediation, and they suggested four steps in empirically establishing the evidence of mediation. In step 1, the independent variable is correlated with the dependent variable. This step establishes that there is an influence that may be mediated. In step 2, the independent variable is correlated with the mediator. This step involves treating the mediator as if it were a dependent variable. In step 3, the mediator is related to the dependent variable. It is not enough just to correlate the mediator with the dependent variable because the mediator and the dependent variable may be related and because both the mediator and the dependent variables might be influenced by the independent variable. Therefore, the independent variable must be controlled in establishing the influence of the mediator on the dependent variable. Step 4 aims is to establish that the mediating variable completely mediates the relationship between the independent variable and the dependent variable and the influence of the independent variable on the dependent variable controlling for the mediator should be zero. The influences in both Steps 3 and 4 are estimated in the same regression equation. If all four of these steps are met, then the data are consistent with the hypothesis that a variable completely mediates the relationship between the independent and dependent variables, and if the first three steps are met but the Step 4 is not, then partial mediation is evidenced.

Structural equation modelling (SEM, also called covariance structure analysis) is designed, in part, to test the complicated regression equations involved in mediation analysis in a single

analysis instead of testing separate regression analyses. Measurement error is a potential biasing effect in mediation testing because of attenuation of relationships and the SEM approach can help to remove the measurement error from the estimation of the relationships among the variables. In addition, the SEM analysis approach provides model fit information that provides information about the correctness of the proposed mediation model to the data.

In structural equation modelling, evaluation of model fit is not as straightforward as it is in statistical approaches based on variables measured without error. Because there is no single statistical significance test that identifies a correct model given the sample data, it is necessary to take multiple criteria into consideration and to evaluate model fit on the basis of various measures simultaneously. For each estimation procedure, some goodness-of-fit indices are taken into account to judge whether the model is consistent with the empirical data. For acceptable model fit, the goodness of fit indices, such as a non-significant chi square statistic (x^2)/degree of freedom ratio (CMIN/DF), the comparative-fit index (CFI), the goodness-of-fit index (GFI) and the Tucker-Lewis Index (TLI) are equal or greater than 0.90 (Hu & Bentler, 1999), and the root mean squared error of approximation (RMSEA) is between 0.03 and 0.08 (Byrne, 2009). However, the goodness of fit indices with values greater than 0.1, show a model rejection (Browne & Cudeck, 1993; Kline, 2005). In this study, model fit was assessed using the Chi square statistic, normed fit index (NFI), the incremental fit index (IFI), the Tucker-Lewis index (TLI), the comparative fit index (CFI), and the root-mean-square error of approximation (RMSEA). The results are presented in Table 5.2 to 5.4 and Figures 4 to 5.

Table 5.2: Results of the hypothetical structural equation modelling (SEM) estimates (n = 1583)

Variable	Parameter	Estimate	S.E.	C.R.	P	Label
Emotional intelligence	Workplace Bullying	-.005	.096	-.107	.915	n.s
Emotional intelligence	Workplace Harassment	-.189	.091	-3.995	***	Sig.
Emotional intelligence	Workplace Aggression	.133	.001	3.918	***	Sig.
Openness to experience	Workplace Bullying	.066	.008	1.418	.156	n.s
Openness to experience	Workplace Harassment	-.126	.008	-2.650	.008	Sig.
Openness to experience	Workplace Aggression	.117	.000	3.411	***	Sig.
Conscientiousness	Workplace Bullying	.362	.007	7.958	***	Sig.
Conscientiousness	Workplace Harassment	-.201	.007	-4.309	***	Sig.
Conscientiousness	Workplace Aggression	-.031	.000	-.909	.363	n.s
Extraversion	Workplace Bullying	-.062	.010	-1.332	.183	n.s
Extraversion	Workplace Harassment	-.095	.009	-1.997	.046	Sig.
Extraversion	Workplace Aggression	.092	.000	2.682	.007	Sig.
Agreeableness	Workplace Bullying	-.125	.009	-2.694	.007	Sig.
Agreeableness	Workplace Harassment	.147	.009	3.094	.002	Sig.
Agreeableness	Workplace Aggression	-.016	.000	-.471	.638	n.s
Neuroticism	Workplace Bullying	-.026	.008	-.567	.571	n.s
Neuroticism	Workplace Harassment	.027	.008	.565	.572	n.s
Neuroticism	Workplace Aggression	.054	.000	1.586	.113	n.s
Mental-Health	Gender	-.099	.591	-4.333	***	Sig.
Mental-Health	Emotional intelligence	-.324	.010	-14.227	***	Sig.
Mental-Health	Openness to experience	-.015	.117	-.674	.500	n.s
Mental-Health	Conscientiousness	.145	.129	6.385	***	Sig.
Mental-Health	Extraversion	-.136	.101	-5.963	***	Sig.
Mental-Health	Agreeableness	.080	.105	3.536	***	Sig.
Mental-Health	Neuroticism	.140	.122	6.162	***	Sig.

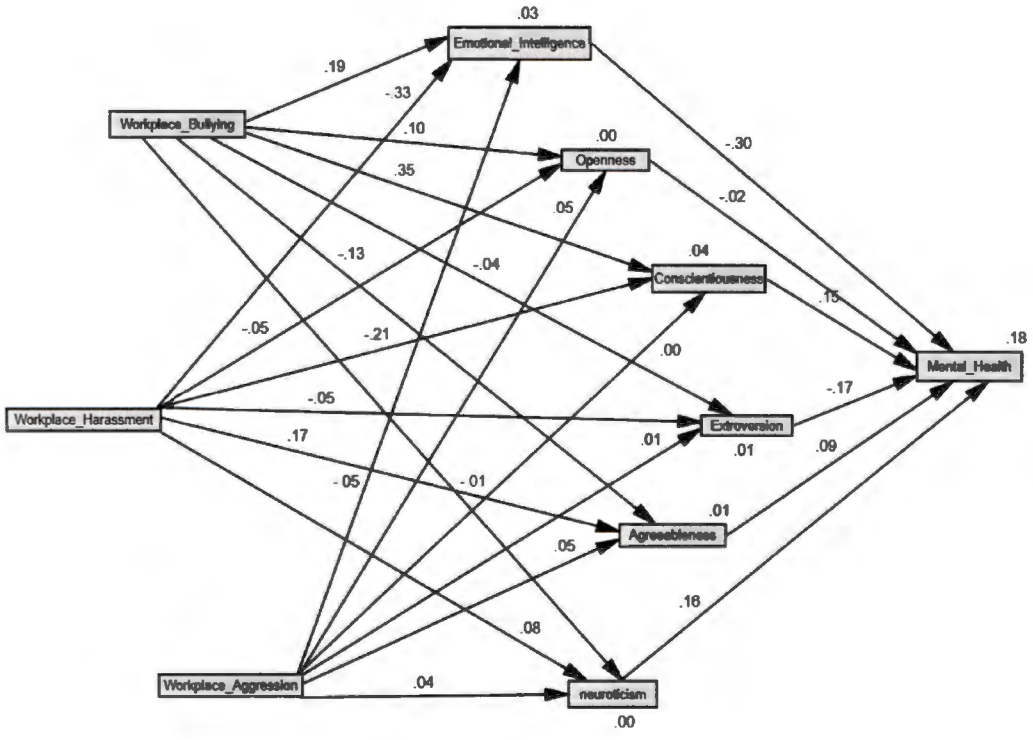

Figure 4: Model showing the effects of the mediators in the association between the IVs and the DV

As presented in Table 5.2 and Figure 4, a path model was specified in structural equation modelling in AMOS to test the mediating roles of emotional intelligence, gender, and each of the Big-Five personality traits in the relationship of workplace bullying, workplace aggression, and workplace harassment on mental health. The measurement model of the independent and the mediating variables indicated that the overall fit of the model was $\chi^2/DF = 2995.827/24$; $p < .001$. However, examination of the indices of the model fit showed that the independent and the mediating variables partially fit the data (NFI = 0.925), (IFI = 0.927), (TLI = -0.308), (CFI = 0.924), and (RMSEA = 0.280). The normed fit index (NFI = 0.925), the incremental fit index

(IFI = 0.927), and the comparative fit index (CFI = 0.924) for this model indicated good fit, but the Tucker-Lewis index (TLI = -0.308) and the root mean squared error of approximation (RMSEA = 0.280) suggested the fit could be improved. Further analyses are required to determine the acceptable model fit with the data.

The results indicated that all specified paths are statistically significant, except for those between emotional intelligence and workplace bullying (β = -.005, p > .05), openness to experience and workplace bullying (β = .066, p > .05), conscientiousness and workplace aggression (β = -.031, p > .05), extroversion and workplace bullying (β = -.062, p > .05), agreeableness and workplace aggression (β = -.016, p > .05), neuroticism and workplace bullying (β = -.026, p > .05), neuroticism and workplace harassment (β =.027, p > .05), neuroticism and workplace aggression (β = .054, p > .05), and that between openness to experience and mental health (β = -015, *p* > .05). The indirect paths from workplace bullying, workplace harassment, and workplace aggression to mental health through emotional intelligence, and the Big-Five personality traits are statistically significant, and the hypothesis that the influences of workplace bullying, workplace harassment, and workplace aggression on mental health of miners are mediated by emotional intelligence and the Big-Five personality traits is supported by the data.

Table 5.3: Mediating effects of EI and Personality on Workplace Violence

Independent variable	Mediator	Dependent variable	β	*p*
Workplace Bullying	Emotional Intelligence	Mental health	-.05	.00
Workplace Bullying	Openness	Mental health	-.00	.45
Workplace Bullying	Conscientiousness	Mental health	.05	.00
Workplace Bullying	Extraversion	Mental health	.01	.37
Workplace Bullying	Agreeableness	Mental health	-.01	.00
Workplace Bullying	Neuroticism	Mental health	-.00	.83
Workplace Harassment	Emotional Intelligence	Mental health	.84	.00
Workplace Harassment	Openness	Mental health	.00	.37
Workplace Harassment	Conscientiousness	Mental health	-.03	.00
Workplace Harassment	Extraversion	Mental health	.01	.16
Workplace Harassment	Agreeableness	Mental health	.01	.00
Workplace Harassment	Neuroticism	Mental health	.01	.09
Workplace Aggression	Emotional Intelligence	Mental health	.01	.12
Workplace Aggression	Openness	Mental health	.00	.36
Workplace Aggression	Conscientiousness	Mental health	.00	.93
Workplace Aggression	Extraversion	Mental health	-.00	.85
Workplace Aggression	Agreeableness	Mental health	.00	.96
Workplace Aggression	Neuroticism	Mental health	.00	.14

Emotional intelligence significantly mediated the effect of workplace bullying on mental health (β = -.05, p <.001), conscientiousness significantly mediated the effect of workplace bullying on mental health (β = .05, p <.001), agreeableness significantly mediated the effect of workplace bullying on mental health (β = -.01, p <.001). Openness did not significantly mediate the effect of workplace bullying on mental health (β = -.00, p = ns), extraversion did not significantly mediate the effect of workplace bullying on mental health (β = .01, p = ns), and neuroticism did not significantly mediate the effect of workplace bullying on mental health (β = -.00, p = ns). Emotional intelligence significantly mediated the effect of workplace harassment on mental health (β = .08, p <.001), conscientiousness significantly mediated the effect of workplace harassment on mental health (β = -.03, p <.001), and agreeableness significantly mediated the effect of workplace harassment on mental health (β = .01, p <.001) Meanwhile, openness to experience did not significantly mediate the effect of workplace harassment on mental health (β

= .00, p = ns), extraversion did not significantly mediate the effect of workplace harassment on mental health (β = .01, p = ns), and neuroticism did not significantly mediate the effect of workplace harassment on mental health (β = .01, p = ns). Emotional intelligence, openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism did not significantly mediate the effect of workplace aggression on mental health (β = .01, p = ns; β = .00, p = ns; β = .00, p = ns; β = -.00, p = ns; β = .00, p = ns; β = .00, p = ns).

On the basis of modification indices, the model was respecified by deleting the non-significant paths in the model. Therefore, a revised model was specified, and the results are presented in Table 5.3 and Figure 5.

Table 5.4: Results of the modified structural equation modelling (SEM) estimates (n = 1583)

Variable	Parameter	Estimate	S.E.	C.R.	P	Label
Emotional intelligence	Workplace Harassment	-.192	.064	-5.815	***	Sig.
Emotional intelligence	Workplace Aggression	.132	.001	3.971	***	Sig.
Conscientiousness	Workplace Bullying	.354	.007	7.944	***	Sig.
Conscientiousness	Workplace Harassment	-.213	.007	-4.795	***	Sig.
Extraversion	Workplace Harassment	-.140	.006	-4.216	***	Sig.
Extraversion	Workplace Aggression	.082	.000	2.454	.014	Sig.
Agreeableness	Workplace Bullying	-.130	.009	-2.858	.004	Sig.
Agreeableness	Workplace Harassment	.140	.008	3.094	.002	Sig.
Mental-Health	Emotional intelligence	-.328	.010	-14.388	***	Sig.
Mental-Health	Conscientiousness	.144	.129	6.324	***	Sig.
Mental-Health	Extraversion	-.136	.101	-5.987	***	Sig.
Mental-Health	Agreeableness	.075	.105	3.281	.001	Sig.
Mental-Health	Neuroticism	.137	.122	6.007	***	Sig.
Openness to experience	Workplace Harassment	-.077	.006	-2.318	.020	Sig.
Openness to experience	Workplace Aggression	.126	.000	3.765	***	Sig.

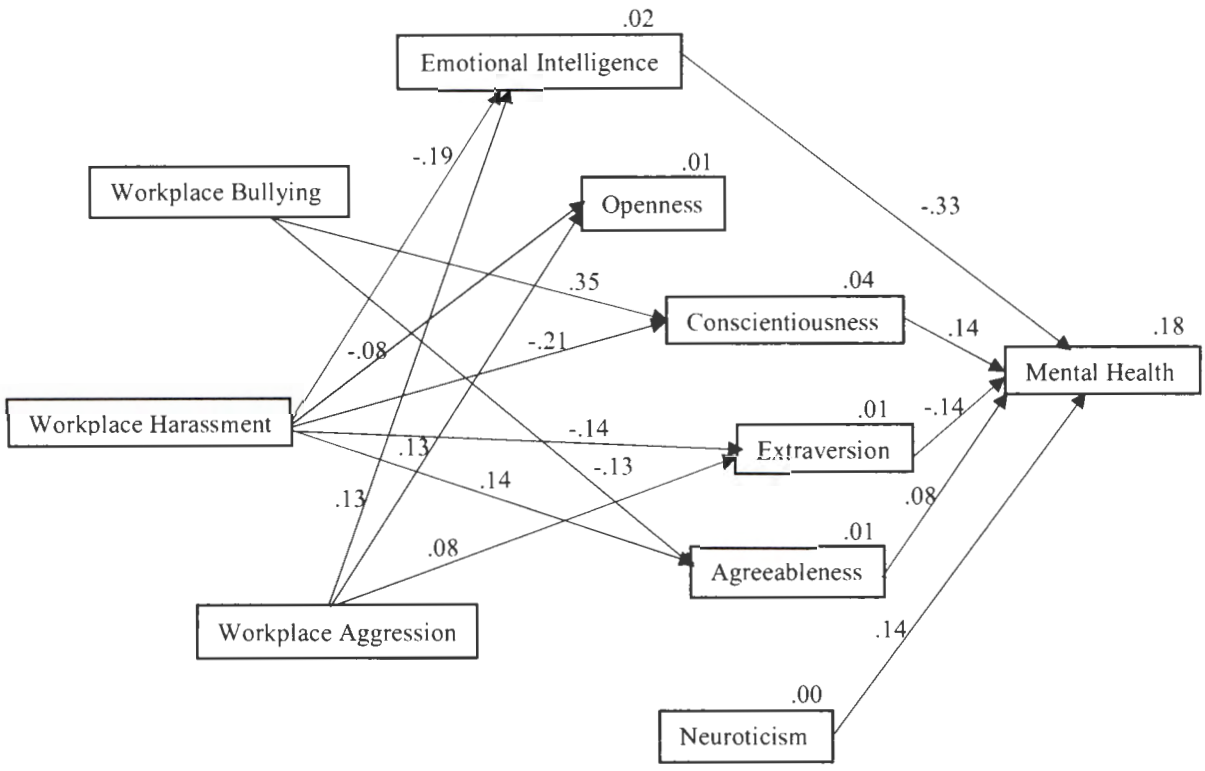

Figure 5: Results of the modified structural path for the variables of study

Results indicated that the overall chi-square was significant, $\chi^2/DF = 3006.129/34$; $p < .001$, but the revised model fits the data well (NFI = 0.914), (IFI = 0.934), (TLI = 0.866), (CFI = 0.970), and (RMSEA = 0.035), according to fit criteria suggested by Hu and Bentler (1999).

As shown in Table 5.4 and Figure 5, the results revealed the estimated standardized path coefficients, or the overall influence of each independent variable. All of the proposed direct and indirect relationships are significant, and the modified model was accepted. There was a significant negative relationship between workplace harassment and emotional intelligence ($\beta = -.192$, $p < .001$), the negative relationship between workplace harassment and mental health was less pronounced when emotional intelligence entered into the model. There was a significant positive relationship between workplace aggression and emotional intelligence ($\beta = .132$, $p <$

.001), the negative relationship between workplace aggression and mental health was less pronounced when emotional intelligence entered into the model.

There was a significant positive relationship between workplace bullying and conscientiousness ($\beta = .354$, $p < .001$), the negative relationship between workplace bullying and mental health was less pronounced when conscientiousness entered into the model. There was a significant negative relationship between workplace harassment and conscientiousness ($\beta = -.213$, $p < .001$), the negative relationship between workplace harassment and mental health was less pronounced when conscientiousness entered into the model. There was a significant negative relationship between workplace harassment and extroversion ($\beta = -.140$, $p < .001$), the negative relationship between workplace aggression and mental health was less pronounced when extroversion entered into the model. There was a significant positive relationship between workplace aggression and extroversion ($\beta = .082$, $p < .01$), the negative relationship between workplace aggression and mental health was less pronounced when extroversion entered into the model.

Lastly, there was a significant negative relationship between workplace bullying and agreeableness ($\beta = -.130$, $p < .001$), the negative relationship between workplace bullying and mental health was less pronounced when agreeableness entered into the model. There was a significant negative relationship between workplace harassment and agreeableness ($\beta = .140$, $p < .001$), the positive relationship between workplace harassment and mental health was less pronounced when agreeableness entered into the model.

The summary and evaluation of the model fit is presented in Table 5.4.

Table 5.5: SEM: Evaluation of the fit of the overall model

Model fit criterion	Hypothetical model (a)		Modified model (b)	
	Observed value	Comment	Observed value	Comment
χ^2 (chi-square)/DF	2995.827/24 (p = .001)	The model is rejected	3006.129/34 (p = .001)	The model is rejected
NFI	0.925	Acceptable model fit	0.914	Acceptable model fit
IFI	0.927	Acceptable model fit	0.934	Acceptable model fit
TLI	-0.308	Good model fit	0.866	Acceptable model fit
CFI	0.924	Acceptable model fit	0.970	Better model fit
RMSEA	0.280	Acceptable model fit	0.035	Better model fit

Hypothesis 3

Hypothesis 3 predicted group differences in mental health as a function of ethnic group affiliation. The hypothesis was tested using a One-Way Analysis of Variance (ANOVA). The results are presented in Table 5.5.

Table 5.6: One-Way ANOVA showing the influence of ethnic group affiliation on mental health

Dependent Variables	Source	SS	df	MS	F	*p*
Mental Health	Between	1248.142	2	624.071	6.167	.002
	Within	159899.478	1580	101.202		
	Total	161147.620	1582			

The results showed a significant influence of ethnic group affiliation on mental health, F(2, 1580) = 6.167, p = .002. Because the results indicated a statistically significant influence of ethnic group affiliation on mental health, there is a need to compute a post hoc test. The Tukey post hoc test was selected to compare the mean differences.

Table 5.7: Post-Hoc multiple comparisons analysis showing the influence of ethnic group affiliation on mental health

Variables	Groups	N	Mean	S.D	1	2	3
Mental Health	1. Black	1523	19.33	10.16	-		
	2. White	49	14.31	7.21	5.03*	-	
	3. Coloured	11	21.28	6.62	-1.94	-6.97*	-
	Total	1583	19.19	10.09			

*. The mean difference is significant at the 0.05 level.

Post hoc comparisons using the Tukey HSD test indicated that the mean score on mental health for the black miners (M = 19.33, SD = 10.16) was significantly higher compared to white miners (M = 14.31, SD = 7.21). However, the mean score on mental health for the black miners (M = 19.33, SD = 10.16) did not significantly differ from the mean score of the coloured miners (M =

21.28, SD = 6.62). Also, the mean score on mental health for the white miners (M = 14.31, SD = 7.21) was significantly higher compared to coloured miners (M = 21.28, SD = 6.62).

Hypothesis 4

Hypothesis 3 predicted group differences in mental health as a function of economic status. The hypothesis was tested using a One-Way Analysis of Variance (ANOVA). The results are presented in Table 5.7.

Table 5.8: One-Way ANOVA showing the influence of economic status on mental health

Dependent Variables	Source	SS	df	MS	F	*p*
Mental Health	Between	4787.767	4	1196.942	12.080	.000
	Within	156359.853	1578	99.087		
	Total	161147.620	1582			

The results showed a significant influence of economic status on mental health, F(4, 1578) = 12.080, p = .001. This therefore necessitated the need to compute a post hoc test. The Tukey post hoc test was selected to compare the mean differences.

Table 5.9: Post-Hoc multiple comparisons analysis showing the influence of economic status on mental health

Variables	Groups	N	Mean	SD	1	2	3	4	5
Mental Health	1. Poor	430	21.10	9.63	-				
	2. Below average	422	18.14	10.46	2.96*	-			
	3. Average	629	17.96	10.02	3.14*	.18	-		
	4. Above average	92	23.61	8.93	-2.51*	5.47*	5.65*	-	
	5. Affluent	10	18.90	3.54	2.20	-.76	-.94	4.70	-
	Total	1583	19.19	10.09					

*. The mean difference is significant at the 0.05 level.

Post hoc comparisons using the Tukey HSD test indicated that the mean score on mental health for the miners in poor category (M = 21.10, SD = 9.63) was significantly higher compared to miners in below average (M = 18.14, SD = 10.46) and average (M = 17.96, SD = 10.02) categories. In contrast, the mean score on mental health for the miners in above average category (M = 23.61, SD = 8.93) was significantly higher compared to miners in poor category (M = 21.10, SD = 9.63). However, the mean score on mental health for the miners in poor category (M = 21.10, SD = 9.63) did not significantly differ from the mean score of the miners in affluent category (M = 18.90, SD = 3.54). The mean score on mental health for the miners in below average category (M = 18.14, SD = 10.46) did not significantly differ from the mean score of the miners in average (M = 17.96, SD = 10.02) and affluent (M = 18.90, SD = 3.54) categories.

In contrast, the mean score on mental health for the miners in above average category (M = 23.61, SD = 8.93) was significantly higher compared to miners in below average category (M = 18.14, SD = 10.46). Also, the mean score on mental health for the miners in above average category (M = 23.61, SD = 8.93) was significantly higher compared to miners in average category (M = 17.96, SD = 10.02). The mean score on mental health for the miners in average category (M = 17.96, SD = 10.02) did not significantly differ from the mean score of the miners in affluent category (M = 18.90, SD = 3.54). Similarly, the mean score on mental health for the miners in above average category (M = 23.61, SD = 8.93) did not significantly differ from the mean score of the miners in affluent category (M = 18.90, SD = 3.54).

Hypothesis 5

Hypothesis 5 predicted group differences in mental health as a function of educational level. The hypothesis was tested using a One-Way Analysis of Variance (ANOVA). The results are presented in Table 5.9.

Table 5.10: One-Way ANOVA showing the influence of educational level on mental health,

Dependent Variables	Source	SS	df	MS	F	*p*
Mental Health	Between	10028.976	4	2507.244	26.181	.000
	Within	151118.643	1578	95.766		
	Total	161147.620	1582			

The results showed a significant influence of educational level affiliation on mental health, $F(4, 1578) = 26.181$, $p = .001$. Because the results indicated a statistically significant influence of educational level on mental health, there is a need to compute a post hoc test. The Tukey post hoc test was selected to compare the mean differences.

Table 5.11: Post-Hoc multiple comparisons analysis showing the influence of educational level on mental health

Variables	Groups	N	Mean	SD	1	2	3	4	5
Mental Health	1. Grade 11 or lower	441	21.86	10.05	-				
	2. Grade 12	894	18.34	10.09	3.52*	-			
	3. Post-matric diploma or certificate	159	14.41	8.22	7.45*	3.93*	-		
	4. Baccalaureate	77	24.56	7.68	-2.70*	-6.22*	-10.15*	-	
	5. Post-graduate	12	13.50	7.43	8.36*	4.84	.91	11.06*	-
	Total	1583	19.19	10.09					

*. The mean difference is significant at the 0.05 level.

Post hoc comparisons using the Tukey HSD test indicated that the mean score on mental health for the miners with Grade 11 or lower education (M = 21.86, SD = 10.05) was significantly higher compared to miners with Grade 12 education (M = 18.34, SD = 10.09), Post-matric diploma or certificate (M = 14.41, SD = 8.22), and Post-graduate (M = 13.50, SD = 7.43). In contrast, the mean score on mental health for the miners with Baccalaureate education (M = 24.56, SD = 7.68) was significantly higher compared to miners with Grade 11 or lower education (M = 21.86, SD = 10.05). The mean score on mental health for the miners with Grade 12 (M = 18.34, SD = SD = 10.09) was significantly higher compared to miners with Post-matric diploma or certificate (M = 14.41, SD = 8.22).

In contrast, the mean score on mental health for the miners with Baccalaureate education (M = 24.56, SD = 7.68) was significantly higher compared to miners with Grade 12 (M = 18.34, SD = SD = 10.09). The mean score on mental health for the miners with Grade 12 (M = 18.34, SD = SD = 10.09) did not significantly differ from the mean score of the miners with Post-graduate degree (M = 13.50, SD = 7.43). The mean score on mental health for the miners with Baccalaureate education (M = 24.56, SD = 7.68) was significantly higher compared to miners with Post-matric diploma or certificate (M = 14.41, SD = 8.22). There was no significant difference in the mean scores of miners with Post-matric diploma or certificate (M = 14.41, SD = 8.22) and Post-graduate degree (M = 13.50, SD = 7.43). And there was a significant difference in the mean scores of miners with Baccalaureate education (M = 24.56, SD = 7.68) and Post-graduate degree (M = 13.50, SD = 7.43).

Hypothesis 6

Hypothesis 6 predicted group differences in mental health as a function of job position. The hypothesis was tested using a One-Way Analysis of Variance (ANOVA). The results are presented in Table 5.5.

Table 5.12: One-Way ANOVA showing the influence of job position on mental health

Dependent Variables	Source	SS	df	MS	F	*p*
Mental Health	Between	8954.411	4	2238.603	23.211	.000
	Within	152193.209	1578	96.447		
	Total	161147.620	1582			

The results showed a significant influence of job position on mental health, $F(4, 1578) = 23.211$, $p < .001$. Because the results indicated a statistically significant influence of job position on mental health, there is a need to compute a post hoc test. The Tukey post hoc test was selected to compare the mean differences.

Table 5.13: Post-Hoc multiple comparisons analysis showing the influence of job position on mental health

Variables	Groups	N	Mean	SD	1	2	3	4	5
Mental Health	1. Labourer	694	21.32	9.64	-				
	2. Lower level miners	553	17.01	8.77	4.31*	-			
	3. Junior management	222	16.30	12.87	5.02*	.71	-		
	4. Middle management	82	23.04	10.30	-1.72	-6.03*	-6.74*	-	
	5. Senior management	32	21.00	2.18	.32	-3.99*	-4.70*	2.04	-
	Total	1583	19.19	10.09					

*. The mean difference is significant at the 0.05 level.

Post hoc comparisons using the Tukey HSD test indicated that the mean score on mental health for the labourers (M = 21.32, SD = 9.64) was significantly higher compared to the lower level (M = 17.01, SD = 8.77) and junior management (M = 16.30, SD = 12.87) miners. In contrast, the mean score on mental health for the labourers (M = 21.32, SD = 9.64) did not significantly differ from the mean score of the middle management (M = 23.04, SD = 8.24) and senior management (M = 21.00, SD = 2.18) miners. The mean score on mental health for the lower level miners (M = 17.01, SD = 8.77) did not significantly differ from the mean score of the junior management miners (M = 16.30, SD = 12.87). In contrast, the mean score on mental health for the lower level miners (M = 17.01, SD = 8.77) was significantly lower compared to the middle management (M = 23.04, SD = 8.24) and senior management (M = 21.00, SD = 2.18) miners. Also, the mean score on mental health for the junior management miners (M = 16.30, SD = 12.87) was significantly lower compared to the middle management (M = 23.04, SD = 8.24) and senior management (M = 21.00, SD = 2.18) miners. There was no significant difference on mental health between middle management (M = 23.04, SD = 8.24) and senior management (M = 21.00, SD = 2.18) miners.

Hypothesis 7

Hypothesis 7 predicted gender differences in mental health. In order to test the gender differences, an independent samples t-test was conducted. The results are presented in Table 5.13.

Table 5.14: t-test analysis showing the difference in mental health between male and female miners

Gender	Men (1287)		Women (296)				
Variables	Mean	SD	Mean	SD	df	t	*P*
Mental Health	19.67	10.11	17.03	9.72	1581	4.12	< .05

The results revealed a statistically significant mean difference on mental health, t(1581) = 4.12, p < .05 between men and women. These results indicate that men (M = 19.67, SD = 10.11) reported significantly higher levels of mental health than women (M = 17.03, SD = 9.72).

Hypothesis 8

Hypothesis 8 predicted difference in place of residence and mental health. In order to test the place of residence differences, an independent samples t-test was conducted. The results are presented in Table 5.14.

Table 5.15: t-test analysis showing the difference in mental health between miners who reside in urban and rural areas

Place of Residence	Urban (328)		Rural (1253)				
Variables	Mean	SD	Mean	SD	df	t	*P*
Mental Health	20.60	10.51	18.85	9.93	1581	2.81	< .05

The results showed a statistically significant mean difference on mental health, t(1581) = 4.12, p < .05 between miners who reside in urban and rural areas. These results suggest that miners who reside in urban area (M = 20.60, SD = 10.51) reported significantly higher levels of mental health than miners who reside in rural area (M = 18.55, SD = 9.93).

CHAPTER SIX

DISCUSSION, RECOMMENDATIONS AND CONCLUSIONS

6.1 **Discussion**

The purpose of this study was to investigate how workplace violence (bullying, harassment and aggression) influences mental health outcomes of employees in the mining industry of Northwest province. Furthermore, emotional intelligence and personality were examined as mediating factors in the relationship between workplace violence and mental health. Theories of WPV [i.e. The Moayed, Daraiseh, Shell and Salem model; Johnson's (2011) ecological model & the Frustration Aggression Theory (FAT)] and mental health (Flanagan, Hartnoll and Murray (2009): behaviourist and cognitive theories) were applied to test whether all the dynamics of workplace violence (bullying, harassment and aggression) would influence the various types of mental health outcomes. Similarly, theories of personality (The five-factor model of personality), gender (Social Role theory) and EI (Goleman's Emotional Intelligence Theory), were also examined to test for their mediating effect.

Results of hypothesis one revealed that mental health was significantly and positively correlated with workplace bullying and workplace harassment respectively. These results correlate with findings of previous studies such as West, Foster, Levin, Edmison, Robibero (2014); Gardner et al., (2016) and Koh (2016). These studies showed a substantial prediction of mental health outcomes when workplace bullying and harassment were present and this pattern were prevalent in various work settings. Expectedly, Cunniff and Mostert (2012) found that the mining industry has the second highest prevalence for direct bullying by supervisors after government departments and that, together with the manufacturing industry, it has the highest direct bullying by co-workers. Therefore the results are fitting of the industry.

As previously established, the mining industry is perpetually transforming in nature as new methods, new technologies, and improvements on business models, policies and administration of operations are developed on a regular basis. According to Fernandes and Pereira (2016), it is these continuous changes that can exacerbate the vulnerability to psychosocial risk factors that cause challenges for occupational safety and health. Other copious studies have also established substantial associations between workplace changes and high incidents of workplace violence. For instance, Torkelson, Holm, Bäckström and Schad (2016) found that a strong relationship existed between work changes and bullying, Oxenstierna et al., (2012) discovered that organizational change played a precursory role in the onset of workplace bullying over a two-year period, and, Serafeimidou and Dimou (2016) showed that in industries that are characterized by frequent changes, bullying is most likely to occur. Since organizational change has been shown to be a precursor of workplace violence it can therefore be regarded as a factor through which poor mental health develops as a result of workplace violence particularly in an industry such as the mining sector.

In addition to the repeated fluctuations consistent with mining, the industry is also a highly psychologically and physically demanding work environment (Edwards, 2012; Botha, 2012; Salaa et al. 2015; Smit, De Beer & Pienaar, 2016), which is a characteristic that is highly associated with the occurrence of workplace violence (Salas et al., 2015). Salas et al. (2015) and Fernandes and Pereira (2016) indicate that work environments have an impact on the mental health as well as the physical health of employees. The mining industry is moreover infamous for its highly politically charged environment which presents a potential for an increased likelihood of workplace violence occurring. In settings like these, the prospect of political disagreements spilling over to work related matters are high. Subordinates who are under the supervision of a shop steward attached to an opposing union may be at an increased risk of experiencing

discrimination due to their political affiliation. For an example, during the process of conducting this study, employees revealed that junior workers who belonged to rival unions to that of their supervisor were given larger workloads, undesirable work shifts and were generally mistreated by the supervisor.

It is clear from literature that, because the mining industry is presented with a combination of multiple factors that would lead to workplace violence (Baillien, De Cuyper, and De Witte, 2011; Notelaers, Baillien, De Witte, Einarsen, & Vermunt, 2012; Fernandes & Pereira, 2016), susceptibility to mental health problems is inevitable. Mining is full of unique labour relations challenges in which employees are faced with working conditions that are psychologically and physically demanding as well as being exposed to psychosocial risks such as workplace violence due to multiple factors inherent in the industry. Accordingly, Finne, Knardahl, and Lau (2011) discovered that workplace violence that occurs in environments like these ultimately lead to a vicious cycle, as bullying at work causes mental distress and that mental distress leads to more bullying.

In contrast to workplace bullying and harassment, mental health was significantly and negatively related with workplace aggression, which is in divergence with several research findings where workplace aggression was implicated as an antecedent for poor mental health in victims of workplace violence (Merecz, Drabek, & Moscika, 2009; Aquino & Thau, 2009; Demir & Rodwell, 2012; Hershcovis, Reich, & Niven, 2015). A possible explanation for these results may lie in the environment of the mining industry itself. Mining is predominantly a male oriented workplace setting and aggression has been shown to be prevalent in such environments. For an example, Kaukiainen, Salmivalli, Björkqvist and Lagerspetz (2001) conducted a study on aggressive behaviour in institutions which are predominantly male and predominantly female as

well as those that had mixed gender. The finding was that in the predominantly male oriented workplaces, males allegedly used more of all types of aggression as compared to their female counterparts in the predominantly female workplaces.

South African mining, in particular, has been characterised by aggressiveness since its commencement (Moodie, 2005; Kynoch, 2006; Phakathi, 2010) and aggression was thus perceived as "part of the daily job". It is, therefore, conceivable that the normalization or rather the acceptance of aggression as part of the daily job may act as a buffer or a defence mechanism against the adverse effect that workplace aggression would have on the mental health of employees. This is consistent with other studies (Vogel, 2006; Coccaro, Noblett, & McCloskey, 2009; Krackow & Rudolph, 2008; Marchiondo, 2012) which suggest that the appraisal or one's perception of a particular behaviour may influence the reaction or rather the impact of that particular behaviour. It can be inferred, therefore, that the normalization and acceptance of aggressive behaviour in this particular study may play a buffering role against the psychological consequences that are associated with experiencing workplace aggression hence no significant correlation was established for mental health and workplace aggression.

Overall, the outcome of this study, as per this hypothesis, may be industrially influenced as postulated in the Moayed Daraiseh, Shell and Salem (2006) model. The model suggests that industrial background, representing a risk factor, can influence the occurrence of workplace bullying (workplace violence). It proposes that fluctuations in the industry can spur occupational risks for workplace violence, and this is applicable to the South African mining industry work settings (most recently the Northwest Province) as it perpetually undergoes transformation (e.g. van der Merwe, 2011; Mashilo, 2010); is psychologically and physically demanding and, most importantly, it is highly politically charged and all of these inevitably lead to stress induced co-

worker conflict and other negative behaviours as established by Oldfield and Mostert (2007). This suggests that curbing workplace violence is relevant in reducing poor mental-health among employees in the mining industry.

Hypothesis two predicted that emotional intelligence and personality will mediate the relationship between workplace violence and mental health. The findings from this study provided empirical evidence that emotional intelligence and personality have significant probabilities of mediating the relationship between workplace violence and mental health. Specifically, the study outcome showed that employees who showed high levels of EI were less likely to be victimized and those who were victimized reported less poor mental health symptoms such as somatic and anxiety. This reinforces previous studies (Ashraf & Khan, 2014; Karimi, Leggat, Donohue, Farrell, & Couper, 2014; AlMazrouei, Dahalan & Faiz, 2015) which also showed similar results. According to Coleman (2008), individuals who are emotionally intelligent are able to cope and/or regulate their emotions to enable them to acclimatize to environments. Predictably, this may play a role in preserving good mental health for WPV targets by helping them cope and manage negative emotions when confronted with WPV.

Outcomes of hypothesis three showed a statistically significant differences in mental health of mines workers from different racial/ethnical background. Specifically, the results showed that coloured mine workers had the highest mean score, followed by the black mineworkers, and then the white mine workers. This findings support the outcomes of previous studies on racial-ethnic disparities in mental health outcomes (Eisner et al., 2009; Sue & Dhindsa, 2006; Perreria & Telles, 2014). Though past studies reported racial disparities in mental health, findings are not conclusive as to which race is better than the others. Some studies have reported that whites generally reported better health compared to black and coloured (Eisner et al., 2009; Sue &

Dhindsa, 2006), while others have reported that coloured are better than the whites (McGuire & Miranda, 2008). Several factors, such as biogenic differences, environmental adaption, resilience, availability of and access to quality health care services, poverty, organizational factors, all may moderate racial differences in mental health.

The result of hypothesis four indicated a significant influence of economic status on mental health of mine workers. The results further showed that the higher the economic status, the better the mental health of mine workers. Evidence is abound in the literature on differences in mental health as a function of economic status (Williams, 1999; Bijl, Ravelli, & Zessen, 1998). It is generally acknowledged that people in the higher economic status category have access to facilities that enhance better health - quality health services, good nutrition, drugs, and live in conducive environment. This runs contrary to the lifestyles of people in the lower ladder of economic status as most live a life that is above average standard in most aspects. Often times, job status/category in the mining industry determine the economic status of the mine workers. Employees in the senior and management category receive higher wages, live in official quarters, and have access to other fringe benefits that the mining industry offers compared to the labourers. All these have implications for the mental health of the mine workers.

Hypothesis five predicted group differences in mental health of mine workers as a function of educational status. The hypothesis was supported with the finding showing that the higher the educational attainment, the better the mental health. This is in agreement with past studies that had examined the influence of educational attainment on human health. Bueno and Dalgalarrondo (2013) in their study characterized the mental health status of their respondents and how this is affected by education. The authors found mental health status to be associated with education. Other studies have also found similar results (Biasoli, Moretto, & Guariento,

2016; Thompson, Guhn, Richardon, & Shoveller, 2017; Drageset, Eide, & Ranhoff, 2016). Possible explanation for this association include higher intellectual capacity among the highly educated in comparison with the less educated and the non-educated. The highly educated are more exposed to information, they are more experienced, and could possibly have access to more related health information than the less educated. This afford the highly educated better opportunity to take charge and manage their mental health better than the less educated. The situation is not different in the mining industry.

Hypothesis six postulated that there will be group differences in mental health based on job position. This hypothesis was accepted as the result indicated a significant influence of job position on mental health of mine workers. Further analysis of the result showed that the mental health of labourers was significantly higher than those of lower and junior management, and that the mental health of labourers did not significantly differ from that of middle and senior management. Past study had also reported variations in mental health among different occupational levels (Warr, 1990). In agreement with the outcome of this study, the author finds differences in job depression and job anxiety among different cadres of employees in their study. While one would expect senior level to management level employees to have better mental health compared to labourers and junior management cadres, other variables such as personality types, marital satisfaction, social support et cetera may mediate and moderate the influence

The results of hypothesis seven revealed a statistically significant mean difference on mental health between men and women as well. They indicated that men reported significantly higher levels of mental health than women, indicating that gender does have an influence on mental health. Lieber (2017)'s work clearly indicates that mental health matters are gender specific. The researcher found that the male gender was one of the factors that played a buffering role against

the onset of paediatric mental illnesses showing sex variances in common mental health conditions. According to Afifi (2007), there are multiple aetiologies of gender-based inconsistencies regarding mental health. Mental health may develop from biomedical (genetic, hormonal, anatomical, physiological); psychosocial (personality, coping, symptom reporting); epidemiological (population-based risk factors) and several other sources. Other scholars, such as Rosenfield and Mouzon (2012) and Elliot (2013), however suggest that gender differences regarding mental health are in the types of illnesses men and women suffer from and not necessarily the prevalence of which both experience mental illness. Elliot (2013), for instance, found that females are more prone to psychological distress and affective and anxiety disorders whereas males are susceptible to substance abuse.

Nevertheless, the findings from this study are relevant based on the differential effects that job conditions may have on the psychological well-being per gender (i.e. Gunkel, Lusk & Wolf, 2007; Rivera-Torres, Araque-Padilla & Montero-Simó, 2013; Solovieva et al., 2014; ten Have, van Dorsselaer & de Graaf, 2015; Yuan, Laura, Barbara & Rebecca, 2016;). According to Rivera-Torres, Araque-Padilla & Montero-Simó, (2013), although males and females may work in the same industry and even in the same occupation, they vary in their experience of the working environment and different types of demands and pressures associated with it. For an example, the physical and psychosocial background, gender dynamics and contract type (i.e. Shift work, job strain, underground work etc.) associated with the mining industry can render females vulnerable to psychosocial risks more than males hence the results mirrored in this study might be reflecting the job effects of the above mentioned conditions on the female employees' mental health. Another aspect is, because the mining industry is a male dominated environment, female employees might be facing gender inequality which may be triggering psychological distress (Elwér, Harryson, Bolin, & Hammarström, 2013). In view of these factors, gender-

appropriate responses and treatment to mental health in the mining industry should be carefully applied.

6.2. Recommendations/Implications for Organizational Health Promotion

Workplace violence is a major occupational hazard in all industries but, although inadequately studied in the mining industry of South Africa, the results as presented in study show that it is highly prevalent in this sector. Primarily, the outcomes of this study show that workplace violence has an independent negative impact on the mental health of employees in the mining sector

As previously stated, the current occupational health and safety practice in South African mining industry is mainly focused on operational safety and physiological wellbeing whilst psychosocial risk factors are marginalized. With regard to workplace violence, mining houses usually emphasize one aspect and that is sexual harassment. The mining industry should give serious considerations to interventions that address the psychosocial environment of their work sites. These interventions should include both primary (aimed at reducing or eliminating adverse psychosocial factors such as workplace violence) and secondary (aimed at intervening at the occurrence of workplace violence incidents). The main objective should be to prevent the occurrence of workplace violence altogether.

There are numerous causes of workplace violence; however, common triggers for employee-on-employee violence in the mining industry as discovered by the current study are gender, inequality based on job status/position and ethnic/racial background, political turmoil, shift working, work stress, lack of understanding of the gravity of the problem and lack of internal Employee Assistance Programmemes. Below is a list of recommendations that can be implemented to remedy the current prevalence rate of workplace violence in the mining industry:

1. Strategy for Gender-based Workplace Violence

Although the sexual harassment policy exists in numerous mining companies, genderism of workplace violence remains a major challenge. The study identified gender-based differences in risk factors. In this study it was found that female employees suffer the misfortune of inequality as they cannot defend themselves against a superior who demands sexual favours from them or perceives them as an easy target because of their gender. One female employee explained that she works with her husband in the same mine and that their supervisor always makes sure that they have different shifts (day and night) to punish her for refusing his sexual advances. When asked if other women give in to the supervisor, she confirmed that they indeed do because they feel defeated by the treatment at work. This is substantiated by the Minnesota Advocates for Human Rights (2003) who stated that due to socialization, unequal power relationship exists between the two genders. As a result, this socialization is also manifested in the workplace where the male is guaranteed of his supremacy over a female co-worker. Unfortunately, this male belief of dominance is not diminished even when the female co-worker occupies a higher rank to the male employee.

It is thus recommended that a strategy that cultivates the culture of protection of females be developed. This strategy should promote a culture of ZERO TOLERANCE for gender-based workplace violence as well as encouraging reporting of such incidents by both victims and witnesses

2. Address Inequality

Unequal power is another risk factor that was identified by the study. In the mining sector, legitimate authority is abused to the disadvantage of subordinates. Bureaucracy is often misused for what it was meant for (i.e. Mosweunyane, 2013). It was created for order and effective administrative purposes but inopportunely it can and has been used as a tool for self-gain and the

abuse of others by those in power. For instance, immigrant mine workers have to do favours for those in authority and/or even pay a bribe so as to get their working permits renewed. It is this uneven power structure that fuels and enables the ill-treatment of underlings and those who are perceived to be socially lower than others. Inequality of power is also evident in gender-based violence in the workplace, more especially in mining.

The mining industry needs to educate employees on equality. The idea of occupational levels must be well clarified as to what it is and what it is not. For an example, it should be clear that a superior office is for the purposes of effective administration (managing the office) and not for cartelized authority (the end of all) with discriminatory practices. Employees must know that there are other structures within the organization where they can get assistance from if they are not satisfied and most importantly where they can get protection. Principles of transparency, good use of authority; impartiality, responsibility and accountability should be prescribed. All these principles will lead to a good rapport between the employer and employees and subsequently commitment and productivity.

3. Manage Political turmoil

Obviously it is not entirely possible to eradicate political volatility as politics do serve their purpose in certain circumstances especially in the job market. For instance, it was the efforts of organized labour which spearheaded the end of racial discrimination and the rule of apartheid in the mining industry. However, the same structures can use their legitimate authority to override set rules in order to suppress those who are vulnerable and perceived as opponents. As mentioned earlier, in mining, shop stewards, who also happen to be supervisors, sometimes demand favours from employees and they tend to punish employees who are in rival unions by giving them a higher workload, unfavourable shifts and several other retributions.

Mining organizations/houses need to learn and understand the political climate their workplaces are operating under, particularly the unions. Although eliminating political turmoil is not likely, they need to find ways in which they can minimize hostile political relations or operations to create a more conducive work environment. According to Rajwani (2011), this can be done by being proactive through the implementation of control measures. For one, they can employ a professional chief risk officer or mediator whose sole responsibility would be to ensure that political disagreements do not overlap into work operations. Another important tool that can be used to minimize politically induced workplace violence is organized labour education and training programmemes. In these programmemes political professionals would train union members on several topics such as good governance, gender-based violence, personality disorder psycho-education, leadership and management skills, emotional intelligence training and any other relevant skills. Through these programmemes mining houses will be able to build a mutually beneficial relationship with organized labour and subsequently minimize workplace violence.

With regards to workplace violence, the company will have to follow the set legal procedures against perpetrators even those that hold office in the unions. Workplace violence campaigns should be a partnership between the unions and the employer. This way the unions will send a message that they will not protect anyone found guilty of instigating any form of workplace violence i.e. bullying, aggression and harassment. The unions should be the ones championing the victim reporting campaigns to develop confidence in victims of abuse. Clearly, all this will not totally prevent workplace violence but it will significantly reduce it to manageable levels.

4. Strategy for Shift working

Shift working is a psychosocial work hazard in the mining industry. This is a gap that some perpetrators use to violate other employees. Shift work can be used in two ways to infringe the rights of employees. First, it can be used as an extortion that enables the perpetrator to get what he/she desires from the victim i.e. day shift in exchange of sexual favours or a bribe. Second, night shifts are ideal for perpetrating workplace violence, especially sexual harassment, as official channels that handle such incidents are normally accessed during normal working hours (day shifts). This is reinforced by Botha and Cronje (2015) whose study found that female mining employees were not confident about their security when working night shifts.

The first practical recommendation for workplace violence due to shift working is to introduce interval rotation of supervisors. This will reduce the use of favours for preferred shifts and it will ensure equal distribution of shifts. The second recommendation is that security should be increased during night shifts. Workplace violence incidents that occur during these periods should be swiftly dealt with by management to set an example that such counterproductive work behaviour will not be tolerated and that perpetrators will not get away with their behaviour simply because it is executed during these times and in the absence of responsible officers. By implementing these processes a standard would be set by management.

5. Management of Work stress

Stress that emanates from work related matters may become so uncontrollable that it results in workplace violence. An employee suffering from stress is more likely to display negative behaviours due to their frustrations. During the interaction with some of the mining employees, some of them felt like they were being passed over for promotions. As a result, this caused tension between those who were promoted and those who felt they were unfairly passed over.

This situation led to work stress for both these groups and some of them acted out by harassing each other at work. It is therefore highly recommended that the employer adopt an attitude of "taking care of the employee first" before thinking of profit. This is a strategy that has been effective according to Robbins and Judge (2012). When others are not promoted, it is important to address those who feel left out and clear any misconceptions they might have about the whole process.

Furthermore, work stress may emanate from increased work shifts. Understandably, it is profitable for the employer when employees take extra shifts and work longer hours without resting, however in the long run this breeds a climate of potential tension, stress and consequently workplace violence. It is recommended that a measurement of the number of extra shifts an employee can take beyond their normal working hours be established, and that no employee should be permitted to take shifts further than this allowance. This will force the employees to rest and the company will ensure safety this way.

6. Lack of understanding of the gravity of workplace violence

Because workplace violence is underplayed in the mining industry as it is perceived to be "part of the job" or as a "boys game", the effects of workplace violence have been undermined (lack of the understanding of the gravity of the problem) and this breeds more violence. This ignorance has left the industry vulnerable to more potential workplace violence. Appropriate safety and conflict resolution measures, thus, need to be put into place. Organizations should conduct awareness campaigns on workplace violence education and the importance of recognizing its occurrence, effects and the process of resolving it.

7. **Lack of Employee Assistance Programmemes**

This study found that most mining areas did not have a comprehensive internal employee assistance programmeme (EAP). Victims of workplace violence do not have a professional outlet where they can diffuse their negative emotions and, as a result, victims resort to retaliation which potentially leads to more employee-to-employee workplace violence. An internal employee assistance programme (EAP) would diffuse the situation by addressing and acknowledging the problem and therefore alleviating and preventing the problem. Some instigators of workplace violence are suffering from psychosocial problems and other undiagnosed psychological conditions, with an EAP programme in place, employees would have quick access to assistance and early detection of these potentially counterproductive work behaviour inducing problems. In this manner they would address their stressors and receive treatment quicker.

8. Role of organization:

Organizations need to comprehend that curbing workplace violence is not just a matter of implementing systematic policies and strategies. But, to create a harmonious work environment, mining companies must ensure adherence to these policies as well as cultivating a culture of *zero tolerance* towards any form of employee abuse. A harmonious work environment lies behind a managerial practice upholding a culture of equality and justice and in that way a rapport can be established with the employees. According to Yeung (2009), a good employer-employee rapport is fundamental for a sustained management of business. When the employer is perceived as being dedicated to safe-guard the wellbeing of the employees, it boosts their morale and thus commitment to the organization increases.

Organizations should practise the principles of empathy, caring, being supportive, abuse-free environments and practice fairness. This will elicit a harmonious work atmosphere and a sense of

security. If these principles are not applied, the employees' capacity to endure the hostile environment will overtime fade and negative behaviours will start manifesting in the workplace.

The Organization should develop and implement the following policies and structures:

- Workplace Violence Policy
- Sexual Harassment Policy (Gender-based Workplace Violence)
- Employee Assistance Programme (Internal) – for early detection and for diffusing purposes
- Ethics Committee – this will address moral upliftment
- Implementation and Complaints Committee – this should include all relevant stakeholders i.e. unions, labour relations, EAP, Human Resources manager, Occupational Health and Safety representative and a general employee.

Organizational Health Promotion

It is recommended that the following Tailor-made training models be developed and implemented for the mining industry. These will help in the prevention and/or reduction of workplace violence incidents:

1. Personality Disorder Psycho-education
2. Leadership & Management Training
3. Emotional Intelligence Training
4. Gender Issues/Sensitivity Awareness
5. Organized Labour Education and Training Programmes
6. Policy development training

7. Workplace Violence and Industrial Relations Training
8. Workplace Violence and Human Resources Practices
9. External/Internal Employee Health & Wellness Programmeme
10. Occupational Health and Safety Programmeme

Companies need to understand that these recommendations will not be, in any way, an instant remedy to workplace violence. However, to address workplace violence it will take continuous efforts by the organizational management, organized labour and the employees. The most important part is to foster an attitude and culture of *no workplace violence*. This and other statements should be displayed in all employee communication medium and notice boards. Management should also ensure that there is constant monitoring and evaluation of the implementation of the policy and other measures put in place to prevent workplace violence.

Conclusion

This study offers the following conclusions:

This research has added to the body of literature on workplace violence within the South African mining industry context. It has shown that workplace violence is prevalent in this sector and that there are three components to workplace violence and all three of these components are active in the mining sector.

This study also uncovered a few issues that even I, as a researcher, was not initially aware of their depth to the contribution to workplace violence. For instance, although I was aware that the results of this study indicate that women ($M = 12.83$, $SD = 12.95$) reported significantly higher levels of workplace harassment than men, it was clear from the responses by the participants that they experienced problems with sexual harassment by their co-workers. Furthermore, 40 per cent

of participants indicated that sexual favouritism is a common practice by co-workers (see Figure 5). The most alarming issue in terms of participant feedback regarding sexual favours is that 48 per cent of participants indicated that their direct supervisors are aware of it, and they actually also practise sexual favouritism. It is clear from the research that the majority of women perceive that they are not accepted by their male co-workers. This could be an indication that the viewpoints of males towards women working in the mining industry remain stereotyped by an attitude that women do not belong underground. This attitude is representative of the mining environment and is not a new phenomenon for mine management: it will remain part of the mining industry for some time into the future. The mining industry faces serious challenges related to the harassment of women, specifically those entering underground workings.

An unfavourable working psychosocial environment is detrimental to an individual's health and wellness (Fernandes & Pereira, 2016) and to the success of the organization. An individual can suffer from physical health and mental illness due to the ill-treatment they experience at work. It is even more detrimental because the employees depend on the job for their livelihood even though they have ill feelings about the job itself and so they feel trapped in the vicious circle of abuse. All of this result in internal distress for the employee and so mental illness sets in and subsequently the work suffers as the individual can no longer perform to their optimum function.

Because, unlike other occupational risk factors, psychosocial risk factors and the effects thereof are not tangible, most employers tend to disregard the magnitude of their impact on the individual and the organization. As a result, factors such as illness, absenteeism or presenteeism, accidents or work mistakes, intention of leaving the job and poor performance gradually decelerate company performance and production and ultimately profit, and by the time management becomes aware of the problem a significant sum of damage has been done and

profits have been lost. Mining companies should comprehend that workplace violence is prevailing amongst mining employees and this should be a major concern for their management. Therefore, they should ensure that they develop preventative systems that will curb workplace violence or at least minimize its impact on the victims and the organization.

Implications and Suggestions for Future Research

The results presented here are based on an empirical study of a sample of employees within the mining sector of the Northwest Province in South Africa. However, as mentioned before, there is a need for further research to be conducted across a broader range of industries, including the examination of additional variables within the bullying process in order to enhance the understanding of bullying and its implications for both individuals and organisations

Furthermore, due to the scarcity, in literature on workplace violence within the South African mining sector, this study recommends that researchers conduct other studies to contribute to the theoretical understanding of the development of an interventional programmeme for counterproductive workplace behaviours. Because current reserach focused more on individual characteristics as the antecedents of workplace violence, it is recommended therefore that organizational factors that have influence on workplace violence be explored.

This research is the first to examine all three variables of workplace violence (Bullying, Harassment and Aggression) within the South African mining sector, it is recommended that other studies that employ other new scales or constructs be conducted. Although workplace violence measurement tools are available for the uses of research, there is a shortage in the development of scales that are specifically African, and thus far, measurements of workplace violence are Eurocentric, leaving a gap that needs to be filled in research. By so doing, the body

of literature in the research of workplace counterproductive behaviour and its contributors will be largely developed.

Moreover, the findings of this study are going to be used to develop training, interventional and preventative programmemes for the mining industry. The results will also be used for future research conducted within larger samples. This study's findings highlight that it is important that employers in the mining sector address what is perceived to be "soft issues" because it is these soft issues that are crucial for the development and productivity of the organization and thus profit margins. Other studies may need to research the direct way in which workplace violence impacts organizational profits.

Strengths

This study includes the use of validated scales for all constructs. The research setting is industrially representative as it is comprised of the largest part of the mining industry in the South African mining sector.

Limitations

The main limitation of this study is the use of self-report measures. In research of this nature the data is sourced using self-report measures of dependent and independent variables which can create concerns about the validity of casual conclusions because participants either over- or under-emphasize problems.

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APPENDIX A

Ethics Approval Certificate

NORTH-WEST UNIVERSITY
YUNIBESITI YA BOKONE-BOPHIRIMA
NOORDWES-UNIVERSITEIT
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2014/05/27

ETHICS APPROVAL OF PROJECT

This is to certify that the next project was approved by the NWU Ethics Committee:

Project title :

Workplace Violence Dynamics and Mental Health of Employees in the Northwest Province Mining Industry: Implications for Organizational Health Promotion

Projectleader :Prof.Idemudia **Student:** M Mikateko

Ethics number: NWU-00057-14-A9

Status: S = Submission; R = Re-Submission; P = Provisional Authorisation; A = Authorisation

Expiry date: 2019/05/16

The Ethics Committee would like to remain at your service as scientist and researcher, and wishes you well with your project.

Please do not hesitate to contact the Ethics Committee for any further enquiries or requests for assistance.

The formal ethics approval certificate will follow shortly.

Yours sincerely

HM Halgryn

NWU Research Ethics Secretariate

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APPENDIX B
RESEARCH QUESTIONNAIRE

Informed Consent for Participants

NORTH-WEST UNIVERSITY
YUNIBESITI YA BOKONE-BOPHIRIMA
NOORDWES-UNIVERSITEIT

ETHICS COMMITTEE

Northwest University: Mafikeng Campus
Department of Psychology (2014)
School of Human & Community Development
Private Bag X2046, Mafikeng Campus, Mmabatho, 2735
Tel: 0183892899/Fax: 0183892424

Study Name: **Workplace Violence and Mental Health of Mine Workers in Northwest Province: A Mediation Study**

Principal Researcher: Mikateko Mabunda
Student: 23367008: PhD in Psychology
Contact Details: 0734829799/Mikateko.mabunda@yahoo.com
P.O. Box 524, Olivedale, 2158, Johannesburg

Promoter: Prof. E.S. Idemudia

PLEASE READ THIS DOCUMENT CAREFULLY. YOUR SIGNATURE IS REQUIRED FOR PARTICIPATION. YOU MUST BE AT LEAST 18 YEARS OF AGE TO GIVE YOUR CONSENT TO PARTICIPATE IN RESEARCH. IF YOU DESIRE A COPY OF THIS CONSENT FORM, YOU MAY REQUEST ONE AND WE WILL PROVIDE IT.

Dear Employee

We are currently conducting research on the workplace violence dynamics and mental health of employees in the Northwest Province Mining Industry. Part of this research requires your responses on the attached questionnaire. It should take you approximately 1½ hours to complete the questionnaire. I understand that this is a substantial investment of your time. However your response is valuable as it will contribute towards a South African understanding of workplace violence dynamics and mental health of employees in the Northwest Province Mining Industry and will have an impact on research nationally and internationally. I would therefore like to invite you to participate in this research. Please ensure that you answer all questions.

Your responses will remain confidential and anonymity is guaranteed. The questionnaire requires no identifying information. Should you choose not to participate, this will not be held against you in any way. Feedback in the form of a one-page summary sheet will be available on request and for any further questions on the progress of the research please feel free to contact me.

CONSENT

I, _____ hereby voluntarily consent to participate in the following project:
Workplace Violence Dynamics and Mental Health of Employees in the Northwest Province Mining Industry: Implications for Organizational Health Promotion
I realise that:

1. The study deals with workplace violence dynamics and mental health of employees in the Northwest Province Mining Industry
2. The Ethics Committee has approved that individuals may be approached to participate in the study.
3. The project protocol; i.e. the extent, aims and methods of the research, has been explained to me.
4. The protocol sets out possible discomfort for persons participating in the research and an explanation of the anticipated advantages for myself or others that are reasonably expected from the research
5. I will be informed of any new information that may become available during the research that may influence my willingness to continue my participation.
6. Access to the records that pertain to my participation in the study will be restricted to persons directly involved in the research.
7. Any questions that I may have regarding the research, or related matters, will be answered by the researcher.
8. If I have any questions about, or problems regarding the study, or experience any undesirable effects, I may contact the researcher.
9. Participation in this research is voluntary and I can withdraw my participation at any stage.
10. If any psychological problem is identified at any stage during the research, or when I am vetted for participation, such condition will be discussed with me in confidence by a qualified person.
11. I indemnify the North West University and all persons involved with the above project from any liability that may arise from my participation in the above project or that may be related to it, for whatever reasons, including negligence on the part of the mentioned persons.

_____
SIGNATURE OF RESEARCHED PERSON

_____
SIGNATURE OF PERSON THAT INFORMED

THE RESEARCHED PERSON

Signed at _____ this _____ day of _____ 2014/5

THANK YOU FOR CONSIDERING TAKING PART IN THE RESEARCH PROJECT

DIRECTIONS

This questionnaire contains 5 sections. Please use a pen to complete the questionnaire.

Section A:

This section of the questionnaire refers to background or biographical information. This information will allow us to compare groups of respondents. Once again, we assure you that your response will remain anonymous. Your co-operation is appreciated.

1. Gender:	Male	1
	Female	2
2. Age (in complete years)		
3. Ethnicity	Black	1
	White	2
	Coloured	3
	Indian or Asian	4
4. How would you describe your economic status?	Poor	1
	Below average	2
	Average	3
	Above average	4
	Affluent	5
5. Your highest educational qualification?	Grade 11 or lower (std 9 or lower)	1
	Grade 12 (Matric, std 10)	2
	Post-Matric Diploma or certificate	3
	Baccalaureate Degree(s)	4
	Post- Graduate Degree(s)	5
6. How would you describe the area in which you are residing?	Urban	1
	Rural	2

Section B:

I. Select 1 between the following answers: "Never," "Now and then," "Monthly," "Weekly" and "Daily"

In the last 6 months did you experience the following at your work place....?	Never	Now and then	Monthly	Weekly	Daily
1. Someone withholding information which affects your performance					
2. Being humiliated or ridiculed in connection with your work					
3. Being ordered to do work below your level of competence					
4. Having key areas of responsibility removed or replaced with more trivial or					

	unpleasant tasks					
5.	Spreading of gossip and rumours about you					
6.	Being ignored or excluded					
7.	Having insulting or offensive remarks made about your person, attitudes or your private life					
8.	Being shouted at or being the target of spontaneous anger					
9.	Intimidating behaviours such as finger-pointing, invasion of personal space, shoving, blocking your way					
10.	Hints or signals from others that you should quit your job					
11.	Repeated reminders of your errors or mistakes					
12.	Being ignored or facing a hostile reaction when you approach					
13.	Persistent criticism of your errors or mistakes					
14.	Having your opinions ignored					
15.	Practical jokes carried out by people you don't get along with					
16.	Being given tasks with unreasonable deadlines					
17.	Having allegations made against you					
18.	Excessive monitoring of your work					
19.	Pressure not to claim something to which by right you are entitled (e.g. sick leave, holiday entitlement, travel expenses)					
20.	Being the subject of excessive teasing and sarcasm					
21.	Being exposed to an unmanageable workload					
22.	Threats of violence or physical abuse or actual abuse					

II. How often have you been exposed to degrading or oppressing activities by your colleagues at work during the last six months? The activities clearly must have been experienced as a means of harassment, not as normal communication, or as exceptional occasions.

Answer by marking the alternative that comes closest to your own experience.
0 = Never, 1 = Seldom, 2 = Occasionally, 3 = Often, 4 = Very often

Have you been exposed to	0	1	2	3	4
1. Unduly reduced opportunities to express yourself.....					
2. Lies about you told to others?					
3. Being unduly disrupted?					
4. Being shouted at loudly?					
5. Being unduly criticized?					
6. Insulting comments about your private life?					
7. Being isolated?					
B. Having sensitive details about your private life revealed?					
9. Direct threats?					
10. Insinuative glances and for negative gestures?					
11. Accusations.?.					
l.2. Being sneered at?					
13. Refusal to speak with you?					
14. Belittling of your opinions?					
15. Refusal to hear you?					
16. Being treated as non-existent?.					
17. Words aimed at hurting?					
18. Being given meaningless tasks?					
19. Being given insulting tasks?					
20. Having malicious rumors spread behind your back?					
2l. Being ridiculed in front of others?					
22. Having your work judged in an incorrect and insulting manner?					
23. Having your sense of judgment questioned?.					
24. Accusations of being mentally disturbed?					

III. On a scale of 1 to 5 (where 1 is "never" and 5 is "often"), in the past six months how often have you experienced the following:

(1 = Never, 2 = Rarely, 3 = Once in a while, 4 = Sometimes, 5 = Often)

Have you experienced any of the following behaviours over the last 6 months	**Never**	**Sometimes**	**Neither**	**Once a week**	**Once a week or more**
1. Been glared at in a hostile manner?					
2. Been excluded from work-related social gatherings?					
3. Had others storm out of the work area when you entered?					
4. Had others consistently arrive late for meetings that you called?					
5. Been given the "silent treatment"?					
6. Not been given the praise for which you felt entitled?					
7. Been treated in a rude or disrespectful manner?					
8. Had others refuse your requests for assistance?					
9. Had others fail to deny false rumors about you?					
10. Been given little or no feedback about your performance?					
11. Had others delay action on matters that were important to you?					
12. Been yelled at or shouted at in a hostile manner?					
13. Been subjected to negative comments about					

your intelligence or competence?					
14. Had others consistently fail to return your telephone calls or respond to your memos or e-mail?					
15. Had your contributions ignored by others?					
16. Had someone interfere with your work activities?					
17. Been subjected to mean pranks?					
18. Been lied to?					
19. Had others fail to give you information that you really needed?					
20. Been denied a raise or promotion without being given a valid reason?					
21. Been subjected to derogatory name calling?					
22. Been the target of rumours or gossip?					
23. Shown little empathy or sympathy when you were having a tough time?					
24. Had co-workers fail to defend your plans or ideas to others?					
25. Been given unreasonable workloads or deadlines — more than others?					
26. Had others destroy or needlessly take resources that you needed to do your job?					
27. Been accused of deliberately making an error?					
28. Been subjected to temper tantrums when disagreeing with someone?					
29. Been prevented from expressing yourself (for example, interrupted when speaking)?					
30. Had attempts made to turn other employees against you?					

31. Had someone flaunt his or her status or treat you in a condescending manner?					
32. Had someone else take credit for your work or ideas?					
33. Been reprimanded or "put down" in front of others?					

Section C:

Instructions: How well do the following statements describe your personality?

I see myself as someone who …	**Disagree strongly**	**Disagree a little**	**Neither agree nor disagree**	**Agree a little**	**Agree strongly**
1. … is reserved.					
2. … is generally trusting.					
3. … tends to be lazy.					
4. ... is relaxed, handles stress well.					
5. … has few artistic interests.					
6. … is outgoing, sociable.					
7. .tends to find fault with others.					
8. … does a thorough job.					
9. … gets nervous easily.					
10. … has an active imagination.					

Section D

Instructions: Indicate the extent to which each item applies to you using the following scale:

Question	**Strongly disagree**	**Disagree**	**Neither disagree nor agree**	**Agree**	**Strongly agree**

1. I know when to speak about my personal problems to others					
2. When I am faced with obstacles, I remember times I faced similar obstacles and overcame them					
3. I expect that I will do well on most things I try					
4. Other people find it easy to confide in me					
5. I find it hard to understand the non-verbal messages of other people*					
6. Some of the major events of my life have led me to re-evaluate what is important and not important					
7. When my mood changes, I see new possibilities					
8. Emotions are one of the things that make my life worth living					
9. I am aware of my emotions as I experience them					
10. I expect good things to happen					
11. I like to share my emotions with others					
12. When I experience a positive emotion, I know how to make it last					
13. I arrange events others enjoy					
14. I seek out activities that make me happy					
15. I am aware of the non-verbal messages I send to others					
16. I present myself in a way that makes a good impression on others					
17. When I am in a positive mood, solving					

problems is easy for me					
18. By looking at their facial expressions, I recognize the emotions people are experiencing					
19. I know why my emotions change					
20. When I am in a positive mood, I am able to come up with new ideas					
21. I have control over my emotions					
22. I easily recognize my emotions as I experience them					
23. I motivate myself by imagining a good outcome to tasks I take on					
24. I compliment others when they have done something well					
25. I am aware of the non-verbal messages other people send					
26. When another person tells me about an important event in his or her life, I almost feel as though I have experienced this event myself					
27. When I feel a change in emotions, I tend to come up with new ideas					
28. When I am faced with a challenge, I give up because I believe I will fail*					
29. I know what other people are feeling just by looking at them					
30. I help other people feel better when they are down					
31. I use good moods to help myself keep trying in the face of obstacles					
32. I can tell how people are feeling by listening to					

the tone of their voice					
33. It is difficult for me to understand why people feel the way they do					

Section E

Instructions:

We want to know how your health has been in general over the last few weeks. Please read the questions below and each of the four possible answers. Please answer ALL the questions by indicating with an "x" the answer, which you think most nearly, applies to you. Thank you for answering all the questions.

(Enter an "x" in the appropriate column for each question with only 1 answer per row)

Have you recently:	**0**	**1**	**2**	**3**
1. Been able to concentrate on what you're doing?	Better than usual	Same as usual	Less than usual	Much less than usual
2. Lost much sleep over worry?	Not at all usual	No more than usual	Rather more than usual	Much more than usual
3. Felt that you are playing a useful part in things?	More so than usual	Same as usual	Less so than usual	Much less than usual
4. Felt capable of making decisions about things?	More so than usual	Same as usual	Less so than usual	Much less than usual
5. Felt constantly under strain?	Not at all usual	No more than usual	Rather more than usual	Much more than usual
6. Felt you couldn't overcome your difficulties?	Not at all usual	No more than usual	Rather more than usual	Much more than usual
7. Been able to enjoy your normal day to day activities?	More so than usual	Same as usual	Less so than usual	Much less than usual
8. Been able to face up to your problems?	More so than usual	Same as usual	Less so than usual	Much less than usual
9. Been feeling unhappy or depressed?	Not at all usual	No more than usual	Rather more than usual	Much more than usual
10. Been losing confidence in yourself?	Not at all usual	No more than usual	Rather more than usual	Much more than usual
11. Been thinking of yourself as a worthless person?	Not at all usual	No more than usual	Rather more than usual	Much more than usual
12. Been feeling reasonably happy, all things considered?	More so than usual	Same as usual	Less so than usual	Much less than usual

Appendix C

Mr Keabetswe Phiri, the Labour Relations Manager leading us into the mine operations of the Pilannesburg Platinum Mines

Appendix D: Collecting data outside of mining grounds. Some of the miners explained that they used alcohol to reduce the stress of their work environment

Appendix E: The researcher with some miners at a shebeen. They explained that they did not feel comfortable participating in the research at work for fear of retaliation by those who perpetrate workplace violence.

Appendix F: The researcher with some miners

Appendix G: One of the mines where data was collected

Appendix H: One of the programmemes offered for occupational health & safety

Appendix I: The researcher, Mikateko Mabunda (first from right), and the research assistant, Mr Rhulani Malungani (third from right) with miners inside the operations area. Please note that the

researcher & assistant had to go through a week's Occupational Health & Safety training and had to wear protective clothing, as seen in the picture, before being permitted to access these areas.

Appendix J: The research assistant, Mr Rhulani Malungani, clarifying the questionnaire for some of the mining employees

Appendix K: Miners completing the questionnaire

Appendix L: Three angles of some of the mines

Appendix M: The researcher entering into the operations area