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Predictors of COVID-related Risk and Resilience in South African Young Adults.

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PSYC7022A - MA(Psychology) Research Report

Prof. Kate Cockcroft

26 June 2023

A research project submitted in partial fulfilment of the requirements for the degree of MA in Psychology in the Faculty of Humanities, University of the Witwatersrand, Johannesburg.

I declare that this research project is my own, unaided work. It has not been submitted before for any other degree or examination at this or any other university.

Signed: _____ Date: 26 June 2023

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Dedication

This paper is dedicated to my family, my partner, best friend, and supervisor who supported me throughout this process, helped motivate me through the difficulties and never let me give up. Especially to my parents who always prioritise my education and have not only given me the opportunities to further my academic career but have given me unconditional support throughout this year and those before. I am indebted to you all for getting me to this stage, for I would not have achieved this alone.

Abstract

The Coronavirus Disease of 2019 (COVID-19) pandemic has been a lengthy and stressful event for people worldwide, placing increased strain on vulnerable populations. This prompts interest in the field of risk and resilience research. There are several apparent gaps in resilience research such as in the context of a pandemic, and in adult and non-western populations. This research report aimed to identify socio-demographic variables that predict risk and resilience outcomes in young, emerging South African adults, following the COVID-19 pandemic. This study fell into a post-positivist paradigm and used a quantitative, non-experimental, correlational, ex-post facto design. Descriptive, correlational and regression analyses were conducted to identify possible socio-demographic predictors of risk and resilience outcomes in this given population. Overall, the sample population exhibited low-moderate levels of depression, and on average displayed high levels of resilience, overall and across individual, relational and contextual resilience Several significant correlations and predictors, although weak, were identified for the outcome variables of depression (risk) and resilience (at individual, relational and contextual levels) including age, gender and education, pandemic-related and perceived stress, loneliness, parental involvement and warmth, childhood and community experiences. Depression was significantly predicted by gender, perceived stress, loneliness, satisfaction with life and parental involvement, where being female, having stronger feelings of loneliness, and dissatisfaction with life predicted higher levels of depression. Furthermore, parental involvement significantly predicted all five outcomes, where high parental involvement predicted low depression and high resilience across all levels. Perceived stress significantly predicted all but one outcome, namely relational resilience. High levels of perceived stress predicted high levels of depression and poor overall, individual, and contextual resilience. All three levels of resilience were significantly predicted by both parents' level of education and parental involvement, where

levels of maternal education predicted better resilience across all domains, while paternal education had the opposite effect. Identifying such predictors can help to better the knowledge base around risk and resilience in the South African, context and in low- and middle-income contexts. Furthermore, this allows for the targeted implementation of tools and interventions to address these outcomes, such as promoting parental involvement, the implementation of targeted stress-management tools, and more female-focused depression interventions.

Keywords: Resilience, Risk, Predictors, COVID-19, Young Adults, Emerging Adults, South Africa

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Chapter 1: Literature Review

Introduction and Theoretical Underpinnings of the Study

The Coronavirus Disease of 2019 (COVID-19) pandemic, a lengthy and stressful event experienced globally, has placed increased strain on vulnerable populations worldwide. This prompts interest in the field of risk and resilience research, particularly in the context of South Africa.

This study aimed to investigate risk and resilience and predicting socio-demographic factors in disadvantaged youth in South Africa, following the COVID-19 pandemic. In this study, the population in question is defined as disadvantaged according to low socioeconomic status, high-density living conditions and/or poor infrastructure in their community. Risk factors are personal factors, either internal or external, that increase vulnerability to stress and adversity, while resilience factors increase protection against the negative effects of stressful and adverse circumstances (Diehl, Hay & Chui, 2012).

Norman Garmezy, a developmental psychologist, is often credited as the founder of resilience research. His research on resilience began with the question of why some children, particularly disadvantaged ones, maintained competence and developed well, despite their risk status and expected behavioural problems (Garmezy, 1973; Garmezy, 1987; Kolar, 2011).

Subsequent to Garmezy's early studies, a collective and continuously adapting approach, initially developed by Garmezy (1991), called Resilience Theory has emerged which has since been contributed to and adapted by many researchers over time (most notably Hart et al., 2016; Masten, 2001, 2011; Theron et al., 2021b; Werner, 2013). This is a key theory in this study and guides the approach to resilience.

Garmezy's Resilience Theory (1991) states that one's resilience and response in the face of adversity are more important to the outcome than the nature and severity of the

adversity itself. The theory is structured around three protective factors contributing towards resilience development, namely, individual character and intelligence, family relationships and familial support, and social structure and external support (Garmezy, 1991). The nature of these factors is believed to determine the resilience shown by an individual when facing adverse circumstances. These protective factors were identified through the analysis of existing studies on childhood resilience (Garmezy, 1991). These studies are elaborated on below under the heading, 'Risk and Resilience Research in Context'. A possible critique of the original Resilience Theory (Garmezy, 1991) is that it largely focuses on the resilience of children and youth, and often does not span into adulthood. Subsequently, Werner (1989, 2013) assessed the characteristics of competent and resilient individuals from infancy through to adulthood and has further adapted resilience theory to account for adult resilience as well, although little is still known about resilience in older adulthood.

The apparent lack of research on adult resilience and the tendency to focus on resilience in childhood might be due to the assumption that it is during childhood that these characteristics and protective factors are most impactful and that their impact carries into adulthood. This was confirmed by several longitudinal studies (including Bolger & Patterson, 2003; Brennan et al., 2002; Caspi et al., 2003; Cederblad, 1996; Fergusson & Horwood, 2003; Masten & Powell, 2003; Radke-Yarrone & Brown, 1993; Reynolds & Ou, 2003; Sameroff et al. 2003; Schoon, 2001; Werner & Smith, 2001), later collated in an overall review (Werner, 2013), all of which suggested that influential resources, and development of competence at early stages, as early as infancy, contribute greatly to adaptation ability at later stages throughout childhood and into adulthood. Furthermore, adverse events that involve some kind of pivotal moment or element of change offer greater opportunities for individuals with an early-established competency to overcome difficulties (Werner, 2013).

Bennett and Windle (2015) also highlight the lack of research on resilience and protective factors in adults, particularly older adults, and developed a model to explain resilience in older adults. This model (Bennet & Windle, 2015) is comprised of three interacting levels, namely individual, community and societal levels that are not hierarchical, but rather are interrelated and is another underpinning theory in this study. At the individual level, 'resources' such as psychological, biological, age, gender and health behaviours are identified (Bennett & Windle, 2015). Housing, social support and social cohesion, as well as culture and religion, are important community-level resources. Lastly, resources such as neighbourhood interaction, welfare, and health services as well as social services and policy are proposed to be impactful at the societal level (Bennet & Windle, 2015).

Bennet and Windle (2015; Windle, 2011) further suggest, in contention with Kalish et al.'s (2015) statement that individual action is required, that external agency may facilitate resilience and that an individual may even engage passively with external resources and still benefit from them. Therefore, environmental, and contextual resources appear to be highly valuable to positive development and resulting resilience, and individual resources are greatly impacted by the surrounding context and environment. Ultimately, the interaction between the individual and the individual's context is what determines the outcome (Bennet & Windle, 2015).

In addition to Resilience Theory, Erikson's (1950, 1968, 1980) theory of psychosocial development has implications for understanding the resilience of emerging young adults during the COVID-19 period. Erikson's theory (1950) proposes that personality development occurs through a set of stages from infancy, and throughout life until maturity. In order for individuals to develop in a particular stage and move on to the next, they will experience and resolve a conflict of sorts, which would serve as "a turning point" in their development (Erikson 1968; 1980; Malone et al., 2016). For this particular study, the population group

spans two stages, namely stage five, identity versus role confusion, which occurs between the ages of 12 and 18, as well as stage six, namely intimacy versus isolation, which occurs between the ages of 19 and 40.

Stage five, identity versus role confusion, is centred around the development of ego identity, which occurs through the experiences and information gained through social interaction with others and the experimentation with different roles and behaviours (Cherry, 2021). Difficulties at this stage can result in being unsure of who one is, disappointment regarding their position in life and instability in relationships or job positions (Erikson, 1968; 1980; Malone et al., 2016). Lewis (2020) suggests that the success of each stage is dependent on the previous, and therefore those who are unsuccessful in stage five may fail to build committed relationships in the stage to follow. This stage may be the stage that some of the younger participants in this population are still engaging with. An additional hurdle for this population is further social restrictions that were in place for extended periods of time due to worldwide lockdowns during the COVID-19 pandemic. South Africa, in particular, faced lengthy and some of the strictest restrictions worldwide, due to the nature of the country's health system and lack of preparedness for such an event (Lebuso, 2022; McKenzie & Princewill, 2021; Smart et al., 2020). Schools, non-essential businesses, and restaurants remained closed or with restricted use for far longer than in other countries such as America and England (Smart et al., 2020; UK Gov, 2021; SA Gov, 2022). Following the initial five-week lockdown, social gatherings, and other day-to-day activities, that were resumed after a year or in some cases a few months in other countries, were restricted and controlled for over two years in South Africa (Lebuso, 2022). People were unable to physically spend time with friends and loved ones and were forced to maintain contact digitally. This restricted the social interaction as well as the opportunity to experiment with different roles that are key to overcoming the challenge of identity building presented in stage five.

Although a percentage of this research population may fall into stage five as discussed above, the majority of the group would fall into stage six, intimacy versus isolation, where the conflict of concern is establishing loving relationships with others. The success of this stage leads to fulfilment in relationships which is important for physical and mental health throughout life (Cherry, 2021), while difficulties may lead to feelings of isolation and/or loneliness, depression lack of strength and intimacy in relationships (Erikson 1950; 1968; 1980). Similarly, to the above, due to circumstances surrounding the COVID-19 pandemic, individuals during this stage may struggle to foster intimacy in their existing relationships and may not have ample opportunity, to begin establishing intimacy within new relationships.

Individuals navigating these stages may struggle to succeed as they were offered far less opportunity to physically foster time and intimacy with other individuals. Failure to overcome conflicts in both stages may lead to feelings of loneliness, role confusion, and lack of both intimacy and identity. In particular, issues of identity and intimacy have been found to be important again later in life (Sneed et al., 2012; Malone et al., 2016). It is possible, that individuals around 18-20 years of age in particular are likely to struggle, as they may be transitioning from difficulty resolving one stage and simultaneously entering another (Lewis, 2020). However, new developments in the theory suggest that these stages are not as linear as Erikson originally proposed, but that they are challenges that one may revisit at a later developmental stage (McAdams & St. Aubin, 1992; Malone et al., 2016; Schoklitsch & Baumann, 2012). Furthermore, those who are engaging with stage six potentially have years ahead of them to overcome such conflicts, although there might be an overall delay in resolving the stage.

While this lockdown period enforced a lack of social interaction, this time spent alone may have provided an opportunity rather than a threat. This time may have in turn, created the space for self-reflection as well as the desire for social interaction, therefore, placing more

value and intimacy on time spent in social interaction. This could further result in the effects of social interactions becoming more impactful. This time may have actually been beneficial to individuals who, following the pandemic, now place greater importance on fostering their relationships and interactions, both for character and identity building as well as for relationship and intimacy development.

It is important to note that the concept of 'crisis' differs in resilience research and Erikson's theory (Svetina, 2014). In resilience, a crisis stems from external circumstances, rather than internal psychological conflicts, the latter of which is the case of Erikson's theory (1950). So, it may not be adverse circumstances that may trigger conflicts, but rather that the consequences of adverse circumstances may hinder the successful resolution of internal psychological conflicts.

Conceptualisation and Definition of Resilience

The definition of resilience has varied over time, both within and across disciplines, where researchers provide their own definitions for resilience (van Breda, 2018). Although at face value definitions often appear similar, resilience as a construct has remained conceptually unclear and inconsistent in its operationalisation (Liebenberg & Ungar, 2009).

Panzeri *et al.* (2021) make use of an interactional definition of resilience which takes three perspectives of resilience into account. Namely, resilience, as a psychological trait supporting emotional well-being, the capacity for stability in functioning and welfare despite challenges and the ability to adapt when challenges arise (Bennett, 2010; Galatzer-Levy & Bonanno, 2012; Luthar et al., 2000; Rossi et al., 2007). Some researchers take a person-centred approach, while others take a variable-centred approach (Moran et al., 2017). Adopting a person-centred approach, Diehl *et al*. (2012) define resilience as an individual's ability to maintain favourable functioning while preserving capacity for positive adaptation despite daily challenges that can threaten one's well-being (also see Masten, 2001; Panzeri et

al., 2021; Zautra et al., 2010). Windle (2011) analysed and defined resilience from a wide range of disciplinary perspectives, while also incorporating key characteristics of the construct, namely significant adversity, the presence of assets and/or resources to offset effects of adversity, and either avoidance of, or the positive adaptation to negative outcomes:

> Resilience is the process of effectively negotiating, adapting to, or managing significant sources of stress or trauma. Assets and resources within the individual, their life and environment facilitate this capacity for adaptation and 'bouncing back' in the face of adversity. Across the life course, the experience of resilience will vary (Windle, 2011, p. 163).

Resilience has also been defined both as an outcome and a process (Kolar, 2011; van Breda, 2018). However, the two should not be considered independent. Resilience outcomes are characterised by specific patterns of behaviour, such as good mental health and social competence, despite the presence of risk factors (Olsson et al., 2003), and as stable patterns of little or no stress over time (Mancini & Bonanno, 2010). Olsson *et al.* (2003) critique the outcome-based approach for creating confusion due to variations in the definition of resilience, as well as the downplaying of individuals' distress. A process-based approach views resilience as positive adaptation mechanisms that modify the impact of risk, despite the extreme circumstantial difficulty, where functional and/or cognitive impairment is expected (Newman, 2004). Olsson *et al.* (2003) argue that to consider outcome-based resilience, one must look beyond psychological well-being, as resilience is not solely limited to psychological well-being (Olsson et al, 2003). Although studied as different approaches, one should consider that positive adaptation (process) leads to positive outcomes. The present study follows this process-based approach, which also takes an interactional definition into account, as discussed above, and assessed resilience using the Child and Youth Resilience Measure (CYRM-28; Ungar & Liebenberg, 2011).

In this study, resilience is further explored through the three subscales within the CYRM-28, in line with Resilience Theory (Garmezy, 1991) that make up resilience, namely individual resilience, relational resilience and contextual resilience. This measure was chosen as a proxy over other measures such as the Rugged Resilience Measure (Jefferies et al., 2021), as it allows for the exploration of all three facets of resilience. The CYRM-28 was also adapted to the age group of the sample population to best evaluate resilience at this particular stage of life, in all three facets. More detail on these scales can be found in the Methods chapter.

Conceptualisation and Definition of Risk

Risk as an outcome is harder to define and is less embedded in theory than resilience. There is also far less literature that explores risk from a psychological perspective. However, the cultural theory of risk is relevant here (Douglas & Wildavsky, 1983). This focuses on collective and social conventions that may influence one's perception of risk or vulnerability to stress and adversity. Risk is positioned as a culturally standardised response (Douglas, 1992) within Cultural Theory. This may be relevant to the population addressed in this study (Black African adolescents and emerging young adults) which likely belongs to a collectivist culture. Risk can also be understood from the perspective of risk factors. According to Masten and Powell's (2003) risk and resilience framework, risk factors, or inhibitory processes, may increase the chances of maladaptive outcomes. In the case of this study, a risk outcome is categorised by a non-resilient, maladaptive, or negative outcome, such as depression and was measured using the Beck Depression Inventory-II (Beck, 1996) which is our proxy for risk. This was chosen as an appropriate proxy for risk as depression is associated with several structural risk factors and has been used as a risk measure in other resilience studies (Theron & Van Breda, 2021; Wiedemann et al., 2022).

Risk and Resilience Research in Context

In general, there is a lack of risk and resilience research in South Africa, although there is growing interest in the area (van Breda, 2018). Resilience research, at least in the past, also tends to have focused predominantly on children and factors around childhood rather than on adolescents and adults. Although not South African or African, there are studies that have examined resilience associated with adverse developmental outcomes related to poverty, an important factor in non-WEIRD (Western, Educated, Industrialised, Rich, and Democratic; Henrich et al., 2010) populations. Garmezy's (1973; 1987; 1991) resilience research, as previously mentioned, stemmed from his interest in resilience outcomes in children despite adverse circumstances, and through his investigation of other studies, structured Resilience Theory.

While the above study looked only at children during childhood, Werner (1989) aimed to identify protective factors in their study on the development of high-risk children, from infants through to adults. They identified three types of protective factors against risk outcomes namely, "dispositional attributes of the individual", "affectional ties within the family" and "external support systems" (Werner, 1989, p. 80). Dispositional attributes of the individual include sociability, language and reading ability and competence, general intelligence, and an internal locus of control (Werner, 1989). Affectional ties with family refer to the emotional support provided by the family during stressful times, whether that be parents, grandparents, siblings, or a partner. Finally, external support systems refer to support and guidance provided by individuals or groups outside of the family, be it school, a religion-bound community, or work environment (Werner, 1989).

Overall, protective factors and positive attributes in at-risk children appear to be tied to individual characteristics, family, school, and other societal institutions (Garmezy 1991; Rutter et al., 1979; Werner, 1989). These three protective factors appear to align with the

three levels proposed in the Ecological Resilience Model (Windle, 2011), namely individual, community and society, as well as in the CYRM-28 indicating a consensus towards the structure underpinning resilience and its development. Similarly, a more recent review of Resilience Theory, conducted by Hadfield and Ungar (2018) highlights the trend of the role familial involvement, structure and stability plays in the development of resilience.

While not much is known about factors that may contribute to risk and resilience, specific to young South Africans, there are some recent studies. A qualitative study conducted by Theron *et al*., (2021b) identified, in contrast to Hadfield and Ungar (2018), that in emerging adults (18-24 years of age) individual capabilities related to resilience were most highly reported, with a small focus on familial involvement and very little attributed to external sources such as faith-based resources, peers and community.

Resilience research, beyond poverty and vulnerable populations (such as HIV orphans), has been conducted in several contexts including natural disasters and trauma but had not been fully examined in the context of pandemics before COVID-19 (Panzeri et al, 2021). Furthermore, research that has been conducted around risk and resilience outcomes in relation to COVID-19 has been conducted largely in Europe, the United Kingdom, and the United States of America (Panzeri et al., 2021), and therefore with a predominant, if not entire, focus on WEIRD populations (Henrich et al., 2010). Therefore, there is minimal research on risk and resilience in the emerging adult population in South Africa and even less research on these factors concerning the COVID-19 pandemic within this population.

However, a few international studies have explored this topic within their own populations and have proven at least in part relevant to the current study. The first study used Windle's (2011) Ecological Resilience Model to identify psychological, behavioural and community factors impacting resilience as a result of the COVID-19 pandemic (Panzeri *et al*., 2021), on an Italian adult population (mean age = 49.9; SD = 16.2) during the first wave

and lockdown. The model proposes that individuals do not exist in isolation but that the presence and absence of resources, at various levels, have a great impact on individuals. Incorporating these resources, this study used an interactional definition of resilience and attempted to address gaps in the COVID-19 outcomes knowledge base, as they mention that to date, very little research had been conducted on positive outcomes, and even fewer with a focus on resilience (Panzeri et al., 2021). Panzeri *et al*., (2021) aimed to address what proportion/ percentage of the population was considered resilient, and which of the factors facilitated versus hindered resilience in the population.

The Panzeri *et al.* (2021) study used binary regression to explore demographic, psychological, community, societal and COVID-19 variables as possible predictors of resilience outcomes, as measured by combined depression and anxiety scores. Seventy percent of the sample population (n = 1034; adults; mean age = 49.9; SD = 16.2), both male and female (49%/51%), from four regions in Italy, showed high levels of resilience, and only 30% did not. However, this is likely to differ from the population in the current study which is seemingly far more vulnerable and at risk (Panzeri et al., 2021).

The second study that is relevant here, used path analysis and structural equation modelling to identify relationships between resilience, demographic variables, distress, and perceived danger during the COVID-19 pandemic in Israel (Kimhi et al., 2020). These factors have been investigated in other contexts such as conflict and natural disasters, but not in the case of a worldwide, large-scale pandemic, and this study aimed to address this gap (Kimhi et al., 2020). Similarly, to Panzeri *et al*., (2021), Kimhi et al. (2020) also examined resilience in three areas, individual, community and national. In the latter study, individual resilience was classified by the stability of functioning following an adverse experience and was suggested to be negatively associated with stress, anxiety, and depression (Hjemdal et al., 2011). Community resilience, in this study, was defined by the degree to which an individual is

helped by their community and to which a community provides aid and support to one another while national resilience was defined by social sustainability and the strength of societal structure (Bonanno et al., 2015). This study also examined well-being in relation to perceived danger and distress, and the relationships between various demographic variables and measures of resilience (Kimhi et al., 2020).

The Kimhi *et al.* (2020) study used two independent internet samples of 605 and 741 participants, evenly distributed between male and female. Two psychological predictors were explored, namely individual resilience and well-being, as well as seven demographic predictors including age, gender, community size and economic difficulties. These variables were examined according to their two hypotheses, that individual resilience and well-being would predict levels of distress and danger, and that demographic variables would significantly add to this prediction. As expected by the researchers, it was found that higher levels of individual resilience and well-being predicted lower reported distress symptoms and sense of danger (Kimhi et al., 2020).

The third study that is relevant here, was a longitudinal study of prospective predictors of risk and resilience trajectories during the early stages of the COVID-19 Pandemic, conducted on individuals from the United States of America and Israel (Shilton et al., 2021). Shilton *et al.* (2021) demonstrated that previous studies have found great variability in stress and anxiety response among individuals, especially surrounding outbreaks of infectious diseases (Mancini & Bonanno, 2010) and highlight the importance of looking at inter-individual variation when looking at COVID-19-related outcomes.

This study made use of latent group-based trajectory modelling (LGMM) to identify subpopulations of individuals showing different patterns of anxiety, as well as to identify baseline risk and resilience factors as predictors of anxiety responses There was a specific

interest in demographic and dispositional resilience factors as well as COVID-19-related stressors as predictors of which trajectories individuals would fall into.

Most participants showed low and stable anxiety over time and were considered resilient, with the next largest group (which was significantly smaller) showing high, stable, anxiety over time, and deemed to fit the chronic anxiety trajectory. Across the six-month period, anxiety levels remained relatively stable. Of the two smaller groups, one showed a start of high anxiety levels that decreased over time (named the recovery trajectory), and the other showed a steady increase of anxiety over time, deemed to fit the delayed anxiety trajectory (Shilton et al., 2021).

Regarding predictors and risk factors, Shilton and colleagues (2021) did not identify any significant differences among the anxiety groups at baseline assessment in terms of COVID-19-related stressors. However, they did identify that those who fell into the chronic and recovered trajectories both showed higher levels of anxiety at the first-time measure. Individuals in the resilient trajectory had fewer sleep problems and were less likely to have a pre-existing anxiety diagnosis than all other trajectories. Finally, resilient individuals showed better emotional regulation skills and less hostility in relationships than those in other trajectories.

In the three studies mentioned above, most individuals showed resilient outcomes despite the pandemic. This finding is supported by a meta-analysis of longitudinal studies on the psychological impact of the pandemic and related restrictions, which found that most individuals, across ages, from several countries, remained resilient despite facing the major stress that this pandemic has presented (Prati & Mancini, 2021). It was noted that there was a lack of research on children and adolescents in Africa and South America.

There were some common findings across the three studies. All three found that the male gender is associated with better outcomes, which is likely due to men showing less

psychological distress in general, while additional stress may be placed on women due to an increase in home and child burdens during COVID-19 (Shilton et al., 2021). Panzeri *et al.* (2021) identified that the presence of children in the household contributed to poorer outcomes, due to possible overcrowding in households and increased responsibilities placed on parents such as home-schooling. These factors and responsibilities lead to increased parental stress, which is also likely to fall more onto mothers rather than fathers in 'nuclear' households.

All three studies also found that older age was associated with better outcomes than younger age. Older adults tend to navigate challenges more easily than younger adults, because of coping resources developed throughout a lifetime of experiences (Charles, 2010). Overall, demographically, younger, female adults indicated the highest level of pandemic stress.

Another consistent finding across the three studies was that financial stress contributed to risk. Panzeri *et al.* (2021) highlighted that living in the less-wealthy regions of Italy predicted non-resilient outcomes in comparison to living in the wealthier Northern regions. Similarly, the other two studies (Kimhi *et al.*,2020; Shilton *et al.*, 2021) found that higher levels of economic stress, or financial burden anxiety, were positively correlated with distress.

While Panzeri *et al.* (2021) found no significant contribution from community variables to resilience, Kimhi *et al.*, (2020) found significant negative correlations between individual and community resilience with both sense of danger and distress symptoms, i.e., the higher one's resilience, the lower one's level of distress and sense of danger. Kimhi *et al.* also found that larger community sizes predicted higher distress and sense of danger, likely due to the less close-knit nature of a larger community. Furthermore, Kimhi *et al*. (2020) identified individual resilience as a positive correlate to, as well as a better predictor of, the

ability to cope with threats, while both community and national resilience were negatively correlated with, and did not significantly predict, the ability to cope. This may be because COVID-19 primarily poses a threat to an individual's health, meaning that this threat is dealt with more personally than socially and nationally (Kimhi et al., 2020).

This corresponds with Panzeri *et al.*'s (2021) finding that community variables had no significant contribution to resilience and suggests that social distancing and restricted time with others may have led individuals to feel reliant on themselves above others. Kimhi *et al.* (2020) also suggest that individual resilience may prove more effective specifically in cases of medical crisis. This may differ in this study, where the population is more community-based and collectivist.

A finding that differed across studies concerned education. Shilton *et al.* (2021) found that higher education resulted in better outcomes, while Panzeri *et al.* (2021) found that higher education was associated with non-resilient outcomes. Panzeri *et al.* (2021) noted that in most psychiatric research, higher education is a better indicator of resilience, but in this case, found that there was a more complex relationship. They speculated that people with higher education are more likely to seek out information regarding the disease, risks, economic impact etc. than those with lower levels of education and that those with higher education were more likely to be working in jobs from home, which could be the cause of added stress.

Unique findings from the studies are as follows: Panzeri *et* al., (2021) identified several psychological variables that were significantly associated with resilience, namely death finality, trait resilience and conscientiousness, while those associated with non-resilience included death thoughts, loneliness, neuroticism, and intolerance of uncertainty. Social distancing had a significant positive impact on resilience outcomes, while COVID-19 anxiety and COVID-19-related traumatic stress were associated with low levels of resilience.

Findings unique to the Shilton *et al*. (2021) study include that those with previous diagnoses of anxiety disorders experienced COVID-19-related anxiety much more intensely than those without such diagnoses. This is consistent with findings that COVID-19 stress has a greater effect on those who are more vulnerable (Pan et al., 2021; Salgado de Snyder et al., 2021). Shilton *et al*. (2021) also found that emotional regulation was significantly higher in the resilience trajectory than others, indicating a significant correlation between resilience and emotional regulation.

Overall, these findings differ from those in the cases of natural disasters, mental health issues and trauma (Kimhi et al., 2020; Panzeri et al., 2021), but are comparable with an equivalent study (C19PRC) conducted in the UK (Panzeri et al., 2021), indicating a possible uniqueness of resilience in relation to health crises (Kimhi et al, 2020).

The three studies provide valuable information for the present study, however, in all cases, there are limitations that are important to acknowledge. All three studies have large sample sizes, over 1000, however, for real-world applications, the sample is still relatively small when generalising to the entire adult populations of various countries. The first two mentioned studies, (Panzeri et al., 2021; Kimhi et al., 2020) made use of cross-sectional designs and were correlational in nature, which limits the ability to draw causal conclusions. However, in the context of COVID-19, drawing causal conclusions is extremely difficult without access to pre-pandemic data.

Sample populations for all three studies were internet samples which limit the findings to only those who are computer literate and who have adequate computer and internet access, suggesting a possible lack of accurate representation of a population as well as the generalisability of findings.

Since the start of the pandemic, research has focused on the negative psychological impact of COVID-19 largely in the global North. Much of this research has focused on

psychological well-being and the negative impact of the pandemic on individuals. However, the psychological impact may be “nuanced”, and many experiences of the pandemic were not “detrimental”, hence a focus on resilience (Panzeri *et al.,* 2021, p.1). Furthermore, resilience research around COVID-19 has largely focused on personal resources while neglecting social, ecological, and structural resources (Holmes et al., 2020; Theron et al., 2021b). The current study addresses these neglected areas by investigating social, ecological, and structural resources in a non-western, disadvantaged South African population.

The research conducted on risk and resilience pre-COVID-19 focused largely on children and adolescents (Kolar, 2011; Luthar & Cushing, 1999). As highlighted above, emerging young adults (the sample in the current study) appear less resilient than older adults with greater life experience, but this needs to be confirmed with further research (Charles, 2010; Kimhi et al. 2020; Panzeri et al., 2021; Shilton et al., 2021). Stress, which impacts resilience, affects individuals differently according to context, gender, age, and developmental stage, with young, emerging, and disadvantaged adults potentially more vulnerable to COVID-related stress due to their developmental stage (Theron et al., 2021b).

Consequently, the research question underpinning this study is, what factors predict risk and resilience in emerging young adults in South Africa? Related to this, the study will explore whether there are significant relationships between socio-demographic variables, and risk and resilience outcomes.

As briefly mentioned above, risk was measured using the Beck Depression Inventory-II (BDI-II; Beck et al., 1996) as a proxy for risk, while resilience was measured using the adapted Child and Youth Resilience Measure (CYRM-28; Ungar & Liebenberg, 2011), including the three CYRM-28 subscales measuring individual, relational and contextual resilience respectively.

Predictors of risk and resilience were measured through various instruments, namely; the Pandemic Stress Questionnaire (Kujawa et al., 2020), the Perceived Stress Scale (Cohen et al., 1983), the University of California, Los Angeles (UCLA) Loneliness Scale (Russel et al., 1978), the Victimisation by Community Scale (Richters & Martinez, 1993; Ruchkin et al., 2004), the Strengths and Difficulties Questionnaire (Goodman, 1997; Goodman et al., 1998), the Perception of Neighbourhood (CRPN; Ruchkin et al., 2004).

Based on the reviewed literature, it was hypothesised that the following variables would significantly predict risk and resilience outcome variables: age, gender, level of education, level of parent's education, employment status, pandemic-related stress, loneliness, childhood experience, familial support (parental involvement and parenting warmth), family adversity, satisfaction with life, perception of neighbourhood/community, victimisation/exposure to violence, and stress or vulnerability. In particular, it was hypothesised that age, victimisation or exposure to violence, loneliness, pandemic-related stress, perceived stress, benevolent childhood experience, family adversity and stress and/or personal vulnerability (perceived difficulties) would negatively correlate with resilience, while gender would also be a significant predictor, where females are likely to be more highly associated with risk outcomes and males with resilience outcomes. We hypothesised that familial/guardian support, positive neighbourhood perceptions, as well as satisfaction with life would correlate positively with resilience. We further predicted that employment status, tertiary education as well as the education level of parents/guardians would be significant predictors of risk and/or resilience outcomes.

Chapter 2: Methods

The following chapter will outline how the aim and subsequent research question and objectives, were addressed. Namely, how the relationships between socio-demographic variables, and risk and resilience outcomes were explored, and, how factors predictive of risk and resilience, in disadvantaged, emerging young adults, in South Africa, following the COVID-19 pandemic, were identified, and investigated.

Sample and Sampling

The data for this research project is secondary data that was drawn from a study entitled "The multisystemic sources of human resilience to COVID-19-related stress: Learning from emerging adults in India and South Africa", (RYSE-SAIn, Theron et al., 2021a) which "investigated personal, social, structural and ecological resources associated with emerging adult resilience to COVID-19-related stress" (p. 3). Secondary data is data that has been previously collected by researchers, that is instantly available for analysis and use (Prasana, 2022). The use of secondary data can be more convenient to use and allows researchers to save time and money. While a common disadvantage of secondary data use is that data is not always compatible with the needs of the study, this data was collected for the greater RYSE study, not an external party or unrelated study, with the intention of addressing questions such as those posed in this study (Prasana, 2022). Furthermore, because data was collected and recorded within the greater study, there was sufficient access and opportunity to obtain information specific to the needs of this study as well as for clarification where necessary. The use of secondary data in a study of this nature, where it can be considered somewhat of a sub-study, is therefore appropriate and avoids many of the common disadvantages associated with secondary data use.

Since secondary data were used from this larger project, the sample and sampling technique of the current study were predetermined.

The eligibility criteria required that participants (i) were between the ages of 18 and 29, (ii) resided in any kind of disadvantaged community (i.e., high density, poor infrastructure, low SES) in Pretoria (South Africa), (iii) had personally experienced COVID-19-related stress and (iv) displayed functional outcomes despite their experience of COVID-19-related stress (Theron et al., 2021a).

The sample consisted of 351 emerging young adults, ranging from 18 to 29 years of age (Arnett et al., 2016), with a mean age of 24.45 (standard deviation = 2.57) from disadvantaged populations in Pretoria, South Africa. While age ranges, including those of adolescence, young adulthood, and adulthood, tend to differ across studies and contexts, this study makes use of the age range used in the greater RYSE study and as presented by Arnett and colleagues (2016) of 18 to 29 years of age, to represent emerging, young adults. Within this predominantly Black African sample, 110 participants identified as male, 241 as female, and one did not disclose/respond.

The sampling technique used was purposive and non-probability. Participants were recruited through social media, advertisements and through gatekeepers with whom the research team had pre-existing relationships (Theron et al., 2021a). Recruited participants invited other participants through snowball sampling. The sample was recruited from the larger Pretoria area (Gauteng). A flyer (see Appendix A) provided potential participants with relevant eligibility criteria and invited them to contact an RYSE research assistant. Participants were provided with a participant information sheet (see Appendix B) and then a consent form if they wished to participate (see Appendix C).

Research Design

This study falls into a post-positivist paradigm and uses a quantitative, non-experimental, correlational, ex-post facto design, as it makes use only of the quantitative data collected and involves no manipulation or experimentation (Chiang et al., 2015). It is correlational in nature as it explores the relationships between various independent and dependent variables (Chiang et al., 2015).

Instruments

Fifteen instruments from the greater study were used in this project. The items from these instruments are largely Likert-type questions, with a few dichotomous questions and some open-ended questions. The instruments below have been categorised according to their role in the analysis performed, namely outcomes and predictors. A few instruments that were used in the greater study have been excluded from this particular study as they were either not relevant to these specific research aims or were too similar in nature to other key instruments in use.

Outcomes

The first two instruments outlined below are the two proxies used to measure resilience and risk respectively. Cronbach's alpha coefficients were calculated for each measure and are reported in the descriptions below to demonstrate reliability.

The Child and Youth Resilience Measure (CYRM-28; Ungar & Liebenberg, 2011; Appendix N). Consisting of 28 items, the CYRM-28 assess the following: Individual resources, including personal skills, such as problem-solving, cooperation and social skills, peer support and awareness of strengths; Relationships with primary caregivers, including both physical and psychological caregiving; Contextual resources that enable connection to culture, religion and spiritual beliefs, and significance of, and engagement with, education. A

question was added that extends the last question of the CYRM, to probe identification with community.

A few wording changes were made as per the equivalent items in the Adult Resilience Measure to make it more suitable for the participants. The measure can be scored in two ways. The first is by summing all items to get a total resilience score (ranging from 28 – 140), and the second is dividing the measure into three subscales, namely individual resilience, ranging from 9 to 45, relational resilience, ranging from 7 to 35 and contextual resilience, ranging from 11 to 55. The higher the score, the higher one's resilience. We made use of both scoring methods in order to assess overall resilience as well as specific areas of resilience, (Cronbach's $\alpha = 0.95$).

The Beck Depression Inventory-II (BDI-II; Beck et al., 1996; Appendix S). The BDI-II taps depressive symptoms. Participants select the single statement that best describes their feelings over the previous two weeks. The items are summed to yield a single, overall score of depression levels. Note that this is non-diagnostic and only indicative of depression. Each item score ranges from 0 to 3, allowing for a total score ranging from 0 to 63, (Cronbach's $\alpha = 0.93$). Two questions, referring to sleeping patterns and appetite, have more than one option (e.g., "both a and b"). Scoring remains the same, as the numbers indicate severity changes. Higher scores indicate higher levels of depression and therefore higher risk.

Predictors

The instruments below were used to collect the data relating to the predictor variables. Cronbach's alpha coefficients were calculated for each measure and are reported in the descriptions below to demonstrate reliability.

The Demographic Questionnaire (Appendix E). The full demographic questionnaire consists of 20 items including race, sex, age, education, access to resources and work status. Only items of relevance to the aims were used for this study namely, race, sex, age, and

employment status, which was calculated from several individual questions pertaining to employment, and education including both school and tertiary education.

The Pandemic Stress Questionnaire (Kujawa et al., 2020; Appendix F). The Pandemic Stress Questionnaire consists of 25 items which measure the subjective experience of exposure to stressful events due to COVID-19, (Cronbach's $\alpha = 0.91$). It has six sub-scales measuring different areas of pandemic stress, namely, general life disruption (six items), interpersonal stress (five items), financial stress (three items), education/professional goals (three items), the health of the individual (five items) and health of others (three items). Participants were first asked whether they have had any of these experiences as a result of the COVID-19 pandemic. This was followed by a Likert-type style severity rating, ranging from 1 (Not at all) to 5 (Extremely bad), where participants rated the severity of their experience how often it occurred and the duration. There were no established cut-off scores, but higher scores indicated higher levels of pandemic-related stress.

The Strengths and Difficulties Questionnaire (Goodman, 1997; Goodman et al., 1998; Appendix G). The Strengths and Difficulties Questionnaire, consisting of 25 items, identifies strengths and difficulties in individuals through their behaviours and feelings, (Cronbach's $\alpha = 0.71$). It comprises five subscales, namely, the emotional problems scale, conduct problem scale, hyperactivity scale, peer problems scale and prosocial scale. Participants indicated to what extent each item applies to them by selecting 1 (not true), 2 (a bit true) or 3 (very true). Scores from all scales, excluding the prosocial scale, were summed, to give a total score between 0 (no stress) and 40 (high stress).

The Perceived Stress Scale (Cohen et al., 1983; Appendix H). This scale measures "the degree to which situations in one's life are appraised as stressful" (Cohen et al., 1983, p. 385). This 10-item scale evaluates psychological stress by investigating how often individuals experience various scenarios within a month, (Cronbach's $\alpha = 0.85$). Questions included "in

the last month, how often have you felt nervous and stressed?" and "how often have you been able to control irritations in your life?". Four items were reverse scored before all items were summed to get a total score ranging between 0 (no/low stress) and 40 (high stress).

The University of California, Los Angeles (UCLA) Loneliness Scale (Russel et al., 1978; Appendix I). The UCLA Loneliness Scale measures feelings of loneliness and social isolation (Russel et al., 1978) by asking individuals how often they experienced various feelings and scenarios. Eight items from this scale were used, (Cronbach's $\alpha = 0.84$). Item scores were summed to a total score, ranging between 8 and 32. Individual item scores range from 1 (never) to 4 (often). Higher total scores indicated higher levels of loneliness. Items included "I lack companionship" and "I am unhappy being so withdrawn".

The Victimisation by Community subscale of the Exposure to Violence Scale (Richters & Martinez, 1993; Ruchkin et al., 2004; Appendix J). This subscale consists of seven items to identify personal experiences of violence in a community, (Cronbach's $\alpha = 0.82$). Participants responded to various scenarios with the number of times they had personally experienced each in the previous year, with a choice of five options, ranging from 'None' to '10+ times'. Higher overall scores indicated higher levels of exposure to violence.

The Family Adversity Scale. The Family Adversity Scale adapted from Labella *et al.* (2017; Appendix K), measured family adversity. Ten items of the Scale were used, (Cronbach's $\alpha = 0.59$), and the wording was changed to a self-report format because the original Scale was designed to be completed by a parent. The wording was also changed to be more understandable to youth, as well as to be more inclusive of atypical family units (Theron et al., 2021a). The response format was dichotomous, requiring yes (1) or no (2), therefore the total score range was between 10 and 20. Lower scores indicated higher levels of adversity.

The Perception of Neighbourhood Scale (Ruchkin et al., 2004; Appendix L). The Perception of Neighbourhood Scale identifies individuals' perceptions of their neighbourhood and communities. Participants indicated their agreement with given statements, on a Likert-type scale ranging from 1, (Always False), to 4, (Always True). When scores are summed, higher scores indicate a more positive perception (13 items, Cronbach's $\alpha = 0.79$).

Parent and Household Status (Appendix M). Sixteen questions were created for the greater RYSE project to address the perception of community spaces and household status and were used in this study. Questions 99-102 explored mother/mother-figure factors, while questions 103-108 explore father/father-figure factors. Items 109-116 explored household and employment factors. This particular study only engaged with the parents' level of education items as they were of relevance to the aims (Cronbach's $\alpha = 0.56$).

The Benevolent Childhood Experiences Scale (Narayan et al., 2015; Appendix O). The Benevolent Childhood Experiences Scale contrasts with the study of adverse childhood experiences. A few changes were made to the original wording, for phrasing to include both present and past tense. This scale uses dichotomous scoring as participants answer a series of questions, with either yes (1) or no (2). Therefore, when summed, the measure gives a single protective factor score, ranging from 10-20, where higher scores are positive (Cronbach's $\alpha = 0.58$).

Two subscales were adapted from Ruchkin et al. (2004):

The four-item Parenting Scale (Appendix P) taps parents/ caregivers/ guardians' involvement in their child/ren's lives by asking whether they would typically know about their child/ren's whereabouts and activities (Cronbach's $\alpha = 0.88$).

The Parenting Warmth Scale (Appendix Q) consists of three items. This scale addresses warmth shown by a parent/ caregiver/ guardian to the individual. In both subscales, each item is scored within the range of 1, (Never) to 4, (Most of the time), allowing for a total score ranging from 4 to 16, and 3 to 12 respectively, (Cronbach's $\alpha = 0.90$). A higher score indicates higher parent involvement and parent warmth respectively.

The Satisfaction with Life Scale (Diener et al, 1985; Pavot et al, 1991; Pavot & Diener, 1993; Pavot & Diener, 2008; Appendix R). The Satisfaction with Life Scale aims to evaluate an individual's satisfaction with their life. Each item is scored from 1, (Strongly disagree) to 7, (Strongly agree), resulting in a total score ranging from 5 to 35, low and high satisfaction respectively, (Cronbach's $\alpha = 0.90$).

Procedure

This study used secondary data, so the data collection was conducted prior to this study. Participants who consented were contacted by a research assistant who emailed them a link to self-report questionnaires for completion. Each scale/subscale within the survey provided specific instructions on how to answer or address each item. The survey was answered in a single sitting, electronically, and took an average of 60 to 90 minutes to complete. Participants were given internet data in order to complete the online survey.

Ethical Considerations

The greater study has ethical clearance from the University of Pretoria Research Ethics Committee, (UP17/05/01, see Appendix T), and I was permitted, by Professor Linda Theron (principal investigator), to use the relevant data (see Appendix W). Ethical clearance was obtained for the use of this secondary data from the University of the Witwatersrand Humanities Research Ethics Committee (MAPSYC-22-02W, see Appendix U and V for ethics certificate and waiver). I did not have any involvement in the data collection process,

and the data that I was given access to was in an anonymised format, therefore anonymity was kept.

Furthermore, participants had already given written, informed consent, for the original study, which included the use of the data for this specific study. Any possible risks of participating were outlined in the consent form (see Appendix C for details), which also informed participants that they would receive a R100 Checkers/Shoprite voucher for participating.

The population was not considered to be vulnerable - all participants were over the age of 18 and gave their own consent. Finally, although questions were unlikely to provoke any psychological distress, some questions were personal, and all participants were offered access to free psychological services if required.

Data Analysis

Data was analysed with IBM SPSS Statistics for Windows, version 28 (IBM Corp, 2021). Although according to Central Limit Theorem (Kwak & Kim, 2017), the sample size should be normally distributed, various normality tests such as Skewness, Kurtosis, Kolmogorov-Smirnov, and Shapiro-Wilks tests, were conducted to assess the distribution of the data. Based on these normality tests as well as the use of various normality plots, non-parametric analyses were used for the inferential analyses conducted. Demographic data was analysed in terms of means, standard deviations, ratios, and distributions of the data.

Chapter 3: Results

The study data is largely interval in nature, with some categorical and a few dichotomous variables. Where necessary, categorical items, such as employment status, were dichotomised for quantitative analysis. For the analysis of data, data was used from 16 instruments, categorised into outcome or predictor variables. Our outcome variables were depression, a proxy for risk, as measured by the Beck Depression Inventory-II (Beck et al., 1996) and resilience, overall, as well as at three levels namely, individual, contextual, and relational resilience, as measured by the 28-item Child and Youth Resilience Measure (CYRM-28). The remaining instruments, which can be found under the methods chapter above, namely, age, gender, pandemic-related stress, strengths and difficulties, perceived stress, loneliness, victimisation by community, family adversity, perception of neighbourhood, parental involvement and parenting warmth, benevolent childhood experiences and satisfaction with life, measured the predictor variables.

After cleaning the data, 343 participants' questionnaires were complete and suitable for use. Deletions of eight participants' data were made, where necessary, where a significant amount of data points were missing. These cases were largely where the majority of, or an entire subscale (instrument) was missing or had been left out by the participant. Where there was only a single or a few missing items within a scale, values were imputed using either mean or median substitution, based on the distribution of the item in question. Normality tests, including skewness and kurtosis as well as using Kolmogorov-Smirnov and Shapiro-Wilks tests, were used to establish the distributions of each variable. These tests, collectively, identified an almost even split between normal and not-normal distributions of variables. Some of them were identified as not normal by all tests, and others of which had mixed results. Overall, gender, tertiary education, employment status, both parental levels of education, victimisation, family adversity, depression, relational resilience, parental

involvement, parenting warmth, and benevolent childhood experiences were identified as having not-normal distributions. Furthermore, using histograms (see Appendix AA) all levels of resilience appeared negatively skewed. However, based on the combination of the above tests as well as histograms, it was decided to run non-parametric inferential statistics, namely Spearman's Rho. (See Appendix Y for the full table of normality test results and Appendix AA for histograms). In the cases of the few missing data points, where a variable was normally distributed, mean substitution or imputation was used, and where a variable's distribution was not considered to be normal, median substitution or imputation was used.

Sample Demographics

Out of the 343 participants, 335 (97.7 percent) identified as Black, with the remainder identifying as Coloured[1] (1.5%) and White (0.6%) and 'Other' (0.6%). Furthermore, 236 (68,8 percent) of the participants identified as female, 106 identified themselves as male (30.9 percent) and only one participant did not identify themselves as either/did not respond. As outlined by the inclusion criteria of the study, the age range of the population was between 18 and 29, with a mean age of 24.45 years of age (*SD* = 2.57). Forty-nine participants (14.3 percent) were attending school at the time of completing the survey. This group was small, as expected, due to the age range of participants, indicating that most would have already completed their time at school. Of the 49 individuals attending school, only five indicated that they have a paying part-time job. Two-hundred and thirty-six participants (68,8 percent) identified that they had some form of tertiary education, whether that be through a University, Further Education Training (FET) or a trade qualification.

Of the remaining 85.7 percent who were not presently attending school, 198 identified themselves as unemployed, 95.45 percent of whom stated they were actively looking for

[1] The racial group termed "Coloured", is a reappropriated, and commonly used term in South Africa, referring to individuals of mixed-race heritage, or those who have diverse cultural, geographical, and ancestral origins, from more than one of the various population groups living in South Africa, including African, European and Asia. (Brown, 2000; OED, 2023; DSAE, 2023).

work. A further 106 participants identified that they were in some form of employment, 30.19 percent of whom were employed full-time, 39.62 percent of whom were employed part-time, and the final 30.02 percent were equally split between being self-employed and being seasonally or temporarily employed.

In the case of parental level of education, as can be seen in Table 1 below, the majority of both mothers' and fathers' highest level of education was tertiary education, with completion of secondary school following, barring the 25.4% who did not know their father's highest level of education.

Table 1

Frequencies showing Parents' Highest Level of Education

	Biological Mother		**Biological Father**		
Level of Schooling	Frequency	Percentage	Frequency	Percentage	Valid Percent
No Schooling	15	4.4	11	3.2	3.2
Less than primary school completed	17	5	7	2	2.1
Primary school completed	9	2.6	14	4.1	4.1
Some secondary school completed	73	21.3	41	12	12.1
Secondary school completed	100	29.2	68	19.8	20
Tertiary education completed	122	35.6	112	32.7	32.9
Unknown	7	2	87	25.4	25.6

See Appendix Z for the remaining full tables of frequencies of relevant categorical variables including race, gender, age, schooling, tertiary education, and employment status.

Descriptive Statistics

The next set of descriptive statistics, as seen in Table 2 below, was run against the outcome variables, namely depression and all levels of resilience, as well as the remaining predictor variables.

Table 2

Means, Standard deviations and Ranges of Outcome and Predictor variables:

	Mean (SD)	Range
Beck Depression Inventory-II	7.82 (9.47)	0 – 63
Child and Youth Resilience Measure-28 (CYRM Total)	120.39 (19.68)	28 – 140
CYRM-28 Individual	40.43 (7.73)	11 – 55
CYRM-28 Relational	30.00 (5.91)	7 – 35
CYRM-28 Contextual	42.93 (7.38)	10 – 50
Victimisation Total	8.21 (2.37)	7 – 35
Family Adversity Scale Total	17.66 (1.70)	10 – 20
Perception of Neighbourhood Total	32.84 (5.44)	13 – 52
Satisfaction with Life Scale Total	20.99 (6.66)	5 – 35
Parenting Scale Total	14.36 (2.32)	4 – 16
Parenting Warmth Total	11.20 (1.71)	3 – 12
Benevolent Childhood Experiences Scale Total	10.64 (1.12)	10 – 20
Rugged Resilience Measure Total	44.36 (6.36)	10 – 50
Loneliness Scale Total	15.62 (5.03)	8 – 32
Perceived Stress Scale Total	28.46 (6.21)	10 – 50
Strengths and Difficulties Questionnaire Total	46.54 (6.66)	25 – 75
Pandemic Stress Questionnaire Severity Total	56.22 (29.47)	25 – 125

In summary of overall findings, beginning with the outcome variables, the overall depression level within the sample was low, with a mean score of 7.82 (*SD* = 9.47), well within the cut-off score for minimal depression at 13, according to the BDI-II manual (Beck et al., 1996). Indicating an overall low level of risk within the sample population.

The Child and Youth Resilience Measure (CYRM-28; Ungar & Liebenberg, 2011), as mentioned above was analysed as a whole, as well as by its three subscales. Overall, the sample showed high levels of resilience, with a mean total score of 120.39 (*SD* = 19.68). This indicates high overall resilience considering that the maximum total score attainable is 140. Furthermore, the CYRM-28 subscale totals also indicated high individual, relational and contextual resilience (see Table 2).

In summary, regarding the predictor variables, scores for victimisation, which were established through self-report of exposure to violence, family adversity and benevolent

childhood experiences were low, indicating an overall positive community, familial and childhood experience for the sample (see Table 2). Both the parenting scale and parenting warmth mean totals were high, indicating high parental involvement and warmth.

The Perception of Neighbourhood Scale resulted in a neutral perception and the total Satisfaction with Life Scale score indicated a medium level of satisfaction with life overall. Similarly, almost central mean scores for both the Perceived Stress Scale and Strengths and Difficulties Questionnaire indicated medium levels of stress overall. Finally, both the average Loneliness Scale and Pandemic Stress Questionnaire scores indicate a low to medium level of loneliness and pandemic-related stress overall (see Table 2).

Inferential Statistics

Next, inferential statistics were carried out to establish predictors of the risk and resilience outcome variables. The normality testing (see Appendix Y for the table of normality test results and Appendix AA for histograms) established that several of the relevant variables were not normally distributed, including parental involvement and parenting warmth, benevolent childhood experiences, family adversity and victimisation. Furthermore, all the outcome variables were significantly skewed. As a result, nonparametric inferential analyses were run. Correlation analyses, using Spearman's rho correlation coefficient, were run as a preliminary assessment of the relationships between variables, as well as to test for multicollinearity between variables (See Table 3). An absence of multicollinearity between independent variables must be established before running multiple regression analysis.

Table 3

Correlation Matrix Outcome Variables and all Independent Variables

Variable	1	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.
1. Depression (BDI-II)																								
2. Child and Youth Resilience Measure (CYRM)	**-.737****																							
3. CYRM Individual	**-.710****	**.956****																						
4. CYRM Relational	**-.688****	**.941****	**.849****																					
5. CYRM Contextual	**-.712****	**.963****	**.899****	**.880****																				
6. Gender	**-.141****	.030	.030	.019	.048																			
7. Race	.011	.032	.046	.013	.042	-.092																		
8. Age	**-.190****	**.242****	**.284****	**.199****	**.219****	.080	.099																	
9. Mother's Education	**-.315****	**.415****	**.371****	**.411****	**.389****	.011	-.013	.026																
10. Father's Education	**-.397****	**.419****	**.395****	**.414****	**.421****	-.045	-.070	.032	**.567****															
11. School	**-.156****	**.195****	**.184****	**.209****	**.156****	-.035	.032	**.319****	.067	.116														
12. Tertiary Education	**.362****	**-.295****	**-.294****	**-.288****	**-.261****	-.025	-.010	-.100	**-.269****	**-.317****	-.067													
13. Employed	-.051	.078	.089	.059	.069	-.001	-.007	**.187****	.076	.041	**.113***	-.096												
14. Pandemic Stress (PSQ)	**-.489****	**.580****	**.556****	**.528****	**.584****	-.024	.078	**.209****	**.319****	**.396****	**.208****	**-.243****	-.043											
15. Strengths and Difficulties (SDQ)	**.360****	**-.246****	**-.242****	**-.246****	**-.210****	-.076	.015	-.072	-.056	-.071	-.054	**.168****	-.086	**-.139****										
16. Perceived Stress	**.603****	**-.540****	**-.514****	**-.513****	**-.531****	**-.199****	.043	**-.162****	**-.133***	**-.274****	**-.129***	**.202****	-.040	**-.328****	**.384****									
17. Loneliness (LS)	**.670****	**-.600****	**-.579****	**-.595****	**-.560****	-.087	.013	**-.198****	**-.258****	**-.406****	**-.170****	**.345****	-.082	**-.405****	**.347****	**.582****								
18. Benevolent Childhood Experiences (BCES)	**.486****	**-.557****	**-.539****	**-.497****	**-.552****	-.065	-.055	**-.176****	**-.304****	**-.415****	**-.138***	**.207****	-.049	**-.431****	**.176****	**.318****	**.455****							

Variable	1	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.
19. Parental Involvement (PS)	**-.514****	**.607****	**.565****	**.614****	**.589****	**-.120***	-.044	**.134***	**.339****	**.409****	**.166****	**-.200****	-.010	**.423****	**-.203****	**-.379****	**-.419****	**-.391****						
20. Parent Warmth (PW)	**-.456****	**.498****	**.435****	**.544****	**.434****	.012	.093	-.029	**.253****	**.390****	.047	**-.266****	-.052	**.268****	**-.193****	**-.311****	**-.418****	**-.356****	**.398****					
21. Satisfaction with Life (SWLS)	**-.327****	**.249****	**.243****	**.243****	**.244****	.081	-.038	-.030	-.007	**.156***	-.020	-.034	-.005	-.044	-.010	**-.273****	**-.285****	**-.264****	.097	**.242****				
22. Mental Well-being (WMWS)	**-.835****	**.832****	**.819****	**.765****	**.803****	.083	.010	**.263****	**.331****	**.407****	**.211****	**-.317****	.096	**.533****	**-.292****	**-.582****	**-.651****	**-.528****	**.587****	**.448****	**.313****			
23. Victimisation	**.350****	**-.387****	**-.368****	**-.389****	**-.358****	.096	.008	-.048	**-.252****	**-.376****	-.146**	**.202****	-.063	**-.240****	**.136***	**.231****	**.341****	**.253****	**-.322****	**-.291****	-.010	**-.349****		
24. Family Adversity (FAS)	**-.341****	**.323****	**.271****	**.373****	**.315****	.047	-.028	.042	**.242****	**.319****	.085	**-.266****	.034	**.184****	**-.151****	**-.329****	**-.355****	**-.173****	**.355****	**.251****	**.148****	**.345****	**-.346****	
25. Perception of Neighbourhood (CRPN)	**-.409****	**.447****	**.392****	**.427****	**.481****	.080	.006	**.211****	**.166****	**.187****	**.118***	**-.134***	**.166****	**.267****	**-.200****	**-.357****	**-.351****	**-.343****	**.245****	**.196****	**.247****	**.436****	**-.293****	**.324****

** $p < 0.01$ (2-tailed); * $p < 0.05$ (2-tailed)

N = 343; except for Mother's Education where n = 336 and Father's Education where n = 253.

Depression and gender were significantly negatively correlated, although the correlation was almost negligible (r_s = -.141, p = .009). Although slight, this indicates that females experienced higher levels of depression than males. Similarly, depression was significantly, although very weakly, negatively correlated with age (r_s = -.190, p <.001) indicating that higher levels of depression were associated with younger aged individuals.

Levels of education, both attending school and having some level of education, had a significant correlation with depression, although the correlation with attending school is almost negligible (r_s = -.156, p = .004) and with tertiary education is weak (r_s = .362, p < .001). Attending school has a negative correlation, indicating that attending school correlates to higher levels of depression while having tertiary education was positively correlated, suggesting that those with tertiary education experienced lower levels of depression.

Victimisation was significantly, although weakly, positively correlated with depression (r_s = .35, p < .001), while the Family Adversity Scale (FAS) (r_s = -.34, p < .001), neighbourhood perception (r_s = -.41, p < .001) and satisfaction with life (r_s = -.33, p < .001) were all significantly, negatively correlated with depression, although once again, only through weak relationships. This indicates that higher levels of victimisation or exposure to violence and high FAS scores are associated with higher levels of depression, while neighbourhood perception scores and satisfaction with life scores are associated with lower levels of depression.

In order to establish accurate correlations between parental levels of education and outcome variables, respondents who stated that they did not know either their mothers' or fathers' highest level of education were removed from the analysis. Ninety participants stated that they did not know their fathers' highest level of education and seven stated that they did not know their mothers' and were therefore removed from the analysis. Both the biological mother's and biological father's level of education was negatively correlated with depression

scores (r_s = -.32, p < .001; r_s = -.40, p < .001) indicating that higher levels of maternal education are associated with lower levels of depression for the individual.

Benevolent childhood experiences had a significant, positive correlation with depression (r_s = .41, p = .005 and r_s = .49, p < .001 respectively) indicating that better childhood experiences are associated with lower levels of depression. Furthermore, both parental involvement and parenting warmth were significantly, negatively correlated with depression, however parental involvement (r_s = -.51, p < .001) had a much stronger effect than parenting warmth, which was very small (r_s = -.17, p = .002) (see Table 3).

Strengths and difficulties (r_s = .36, p < .001), perceived stress (r_s = .60, p < .001) and loneliness (r_s = .67, p < .001) were all significantly, positively correlated with depression, indicating that high perceived stress, personal difficulties, and loneliness are all associated with high levels of depression (see Table 3). Conversely, self-report of exposure to pandemic stress was significantly negatively correlated with depression (r_s = -.50, p < .001) indicating that experiences of high pandemic-related stress were associated with low depression scores.

The following significant correlations were found in relation to the chosen resilience proxy, the CYRM-28 as well as its three subscales which assess individual, relational, and contextual resilience (see Table 3).

Both age and school attendance were significantly, positively and weakly correlated with all four measures of resilience, overall, individual, relational and contextual resilience (Age: r_s = .24, p < .001; r_s = .28, p < .001; r_s = .20, p < .001; r_s = .22, p < .001 respectively and School attendance: r_s = .20, p < .001; r_s = .18, p < .001; r_s = .21, p < .001; r_s = .16, p = .004 respectively).

Similarly, tertiary education and all four resilience scales were significantly, although weakly, negatively correlated (r_s = -.30, p < .001; r_s = -.29, p < .001; r_s = -.30, p < .001; r_s = .26, p < .001 respectively), indicating that having some level of tertiary education is

associated with better resilience. Interestingly, there was no significant relationship between employment status and resilience.

As mentioned above, respondents who did not know their parents' highest level of education were excluded from analyses relating to these items, leaving 343 scores for biological mother's highest level of education and 253 scores for biological father's highest level of education. Similarly to depression, there were significant relationships between resilience, overall and across all three subcomponents, with father's level of education (r_s = .42, $p < .001$; r_s = .40, $p < .001$; r_s = .41, $p < .001$; r_s = .42, $p < .001$) as well as with the mother's level of education, across all measures (r_s = .48, $p < .001$; r_s = .47, $p < .001$; r_s = .45, $p < .001$; r_s = .46, $p < .001$ respectively) (see Table 3). This suggests that the higher one's parents' level of education, the higher one's resilience.

Other predictor variables that had significant correlations with resilience are family adversity, satisfaction with life, neighbourhood perceptions, parenting warmth, parenting involvement, and pandemic stress, all of which had positive correlations (see Table 3). Finally, victimisation, benevolent childhood experiences, loneliness, perceived stress and strengths and difficulties were significantly, and negatively correlated with all domains of the resilience measure (see Table 3). This indicates that high satisfaction with life, a positive perception of one's neighbourhood, and parental involvement and warmth are associated with higher resilience, both overall and individually, relationally, and contextually. Furthermore, high exposure to violence or victimisation, high family adversity, poor childhood experiences, loneliness, high perceived stress, and difficulties are associated with poor resilience (see Table 3). Interestingly, pandemic stress was positively associated with resilience, across all domains, suggesting that high pandemic stress was correlated with high resilience.

Finally, we correlated the outcome variables (CYRM, its subcomponents and the BDI scores) with each other in order to confirm that the measures are related but tapping opposing

constructs. We found that the CYRM total (r_s = -.737, p < .001), individual (r_s = -.710, p < .001), relational (r_s = -.688, p < .001) and contextual (r_s = -.712, p < .001) all have a significant, negative correlation with depression, thus confirming that the two outcome variables are opposing but still related (see Table 3).

Further analyses were run to check whether the data met the rest of the necessary assumptions for multiple regression (Fein et al., 2022). In this regard, both dependent variables are continuous, and all independent variables are either continuous or dichotomous. By design, the data has independence of observations, since each participant could only fill in the questionnaire once. There is an acceptable level of linearity between the independent and dependent variables, see Appendix AB for scatter plots (Fein et al., 2022). Furthermore, the data shows homoscedasticity of residuals, see Appendix AC for Normal P-P plots.

There is no apparent multicollinearity between the independent variables, as there are no overly high correlations (0.7 – 0.9; Yoo et al., 2014). Furthermore, all tolerance values, for all four dependent variables namely, depression, overall CYRM-28, CYRM Individual, CYRM Relational and CYRM Contextual, are above 0.2 (Weisburd & Britt, 2014) and all VIF statistics are well below the cut-off score of 10 (Everitt & Skrondal, 2011). (See Appendix AE).

With regards to significant outliers, all standardised residuals are within the range of -3 and 3 and all Cook's D scores are within range, following the < 1 rule (see Appendix AF). However, 10 outliers were identified using Mahalanobis' distance in conjunction with the cumulative distribution function of Chi-Square, where $p < .001$. Furthermore, there are five Levene's scores which are out of range (>0.16 – calculated using (k+1)/n *3). These fell into the previously mentioned group of 10 outliers (see Appendix AF), which were removed prior to the regression analyses. Finally, approximately normal distributions of residuals for all five outcome variables were found, see Appendix AD for histograms of residuals. Following these

checks, the final regression analyses consisted of 244 participants based on fathers' highest level of education for which 244 participants could give a response.

Following the analysis of multiple regression assumptions, a set of multiple regression analyses were run for each outcome variable, namely depression (risk proxy) and the four proxies for resilience (the total CYRM-28 score, as well as the three subscales namely individual, relational and contextual resilience), in order to identify which demographic and personal variables, including age, gender, education level and parenting warmth, may predict variance in these proxy risk and resilience outcome variables. This resulted in five regression models, with depression (Table 4), overall resilience (Table 5), individual resilience (Table 6), relational resilience (Table 7) and contextual resilience (Table 8) as the outcome variables. All five models were significant (p <.001) and had moderate effects (R^2 = .56; R^2 = .63; R^2 = .59; R^2 = .61 and R^2 = .59 respectively). Furthermore, several significant predictors were identified for all five of the outcome variables, although none with strong effects.

Depression as an outcome was found to have five significant, although weak predictors amongst the identified significantly correlated independent variables (see Table 4).

Table 4

Results of Linear Regression Analysis with Depression (BDI-II) as Outcome

Variable	*p*	Standardised β	Unstandardised β	*SE*	95% CI	
					LL	UL
Gender	**.009**	-0.12	-2.27	0.86	-3.97	-0.57
Age	.398	-0.04	-0.15	0.18	-0.50	0.20
Mother's Highest Level of Education	.826	-0.01	-0.08	0.37	-0.81	0.65
Father's Highest Level of Education	.289	0.06	0.42	0.39	-0.36	1.19
School	.468	-0.04	-1.00	1.38	-3.71	1.71

Variable	*p*	Standardised β	Unstandardised β	*SE*	95% CI LL	95% CI UL
Tertiary Education	.105	0.08	1.70	1.05	-0.36	3.77
Pandemic Stress (PSQ)	.345	-0.06	-0.02	0.02	-0.05	0.02
Strengths and Difficulties (SDQ)	.195	0.06	0.07	0.06	-0.04	0.18
Perceived Stress (PSS)	**.014**	0.15	0.22	0.09	0.04	0.39
Loneliness (LS)	**.000**	0.26	0.44	0.12	0.21	0.68
Benevolent Childhood Experiences (BCES)	.100	0.10	0.95	0.57	-0.18	2.07
Parental Involvement (PS)	**.002**	-0.19	-0.78	0.25	-1.26	-0.30
Parenting Warmth (PW)	.174	-0.08	-0.48	0.35	-1.18	0.21
Satisfaction with Life (SWLS)	**.018**	-0.12	-0.16	0.07	-0.29	-0.03
Victimisation (VS)	.141	0.08	0.36	0.25	-0.12	0.85
Family Adversity (FAS)	.537	0.03	0.18	0.30	-0.40	0.77
Perception of Neighbourhood (CRPN)	.488	-0.04	-0.06	0.09	-023	0.12

$p < 0.05$ (2-tailed); $p < 0.01$ (2-tailed)

Perceived stress and loneliness were positive, yet weak, predictors of depressive outcomes (β = 0.149, $p = .014$; β = 0.257, $p < .001$ respectively), while gender (β = -0.124, $p = .009$), parental involvement (β = -0.194, $p = .002$) and satisfaction with life (β = -0.120, $p = .018$) were negative, yet also weak, predictors of depression. This suggests that high levels of stress and loneliness, as well as being female, having had low parental involvement and low satisfaction with life predict that participants will experience a depressive outcome.

Overall resilience was found to be significantly predicted by nine independent variables (see Table 5).

Table 5

Results of Linear Regression Analysis with Overall Resilience (CYRM-28) as Outcome

Variable	*p*	Standardised β	Unstandardised β	*SE*	95% CI	
					LL	UL
Age	.027	0.10	0.81	0.36	0.09	1.53
Mother's Highest Level of Education	**.000**	0.23	3.41	0.77	1.91	4.90
Father's Highest Level of Education	**.004**	-0.16	-2.35	0.81	-3.95	-0.75
School	.472	-0.03	-2.04	2.83	-7.61	3.53
Tertiary Education	.781	0.01	0.60	2.16	-3.66	4.86
Pandemic Stress (PSQ)	**.002**	0.17	0.11	0.04	0.04	0.18
Strengths and Difficulties (SDQ)	.464	0.03	0.08	0.11	-0.14	0.31
Perceived Stress (PSS)	**.009**	-0.14	-0.47	0.18	-0.82	-0.12
Loneliness (LS)	.736	0.02	0.08	0.25	-0.40	0.57
Benevolent Childhood Experiences (BCES)	**.003**	-0.16	-3.55	1.17	-5.87	-1.24
Parental Involvement (PS)	**.000**	0.25	2.25	0.49	1.29	3.22
Parenting Warmth (PW)	**.000**	0.20	2.84	0.73	1.41	4.28
Satisfaction with Life (SWLS)	.407	0.04	0.12	0.14	-0.16	0.39
Victimisation (VS)	.061	-0.09	-0.95	0.51	-1.95	0.04
Family Adversity (FAS)	.583	-0.03	-0.34	0.61	-1.53	0.86
Perception of Neighbourhood (CRPN)	**.007**	0.13	0.48	0.18	0.13	0.82

$p < 0.05$ (2-tailed); $p < 0.01$ (2-tailed)

Age (β = 0.099, $p = .027$), mothers' highest level of education (β = 0.234, $p < .001$), pandemic-related stress (β = 0.169, $p = .002$), parental involvement (β = 0.247, $p < .001$) and parental warmth (0.199, $p < 0.001$), together with perception of neighbourhood (β = 0.125, *p*

< .007) were all positive, although weak, predictors of overall resilience. This suggests that older age, higher levels of maternal education, more parental involvement and warmth, better perceptions of one's neighbourhood, as well as higher levels of pandemic-related stress predict overall resilience. Conversely, father's highest level of education (β = -0.160, *p* = .004), perceived stress (β = -0.143, *p* = .009) and benevolent childhood experiences (β = -0.164, *p* = .003) were negative, yet still weak, predictors of overall resilience, suggesting that lower paternal education, low perceived stress, and a lack of benevolent childhood experiences predict higher overall resilience (see Table 5).

Similarly, to the above, individual resilience also had nine significant predictors (see Table 6).

Table 6

Results of Linear Regression Analysis with Individual Resilience (CYRM-28 Individual) as Outcome

Variable	*p*	Standardised β	Unstandardised β	*SE*	95% CI	
					LL	UL
Age	**.002**	0.15	0.47	0.15	017	0.77
Mother's Highest Level of Education	**.000**	0.28	1.59	0.32	0.96	2.21
Father's Highest Level of Education	**.004**	-0.17	-0.98	0.34	-1.65	-0.31
School	.410	-0.04	-0.98	1.18	-3.30	1.35
Tertiary Education	.766	0.02	0.27	0.90	-1.51	2.05
Pandemic Stress (PSQ)	**.003**	0.17	0.04	0.02	0.02	0.07
Strengths and Difficulties (SDQ)	.673	0.02	0.02	0.05	-0.07	0.11
Perceived Stress (PSS)	**.017**	-0.14	-0.18	0.07	-0.33	-0.03
Loneliness (LS)	.946	0.01	0.01	0.10	-0.20	0.21
Benevolent Childhood Experiences (BCES)	**.004**	-0.17	-1.43	0.49	-2.40	-0.46

Variable	*p*	Standardised β	Unstandardised β	*SE*	95% CI LL	95% CI UL
Parental Involvement (PS)	**.000**	0.21	0.77	0.21	0.36	1.17
Parenting Warmth (PW)	**.002**	0.17	0.95	0.31	0.35	1.55
Satisfaction with Life (SWLS)	.380	0.04	0.05	0.06	-0.06	0.17
Victimisation (VS)	**.036**	-0.11	-0.45	0.21	-0.86	-0.03
Family Adversity (FAS)	.391	-0.04	-0.22	0.26	-0.72	0.28
Perception of Neighbourhood (CRPN)	.146	0.07	0.11	0.07	-0.04	0.25

$p < 0.05$ (2-tailed); $p < 0.01$ (2-tailed)

Significant individual resilience predictors were identified as age, both maternal and paternal education, pandemic-related stress, perceived stress, benevolent childhood experiences, parental involvement, parenting warmth, and victimisation. Similarly, to overall resilience addressed above, all predictors had a weak effect on the outcome. Age (β = 0.145, $p = .002$), maternal education (β = 0.275, $p < .001$), pandemic-related stress (β = 0.171, $p = .003$), parental involvement (β = 0.212, $p < .001$) and parenting warmth (β = 0.167, $p = .002$) were weak, positive predictors of overall resilience. While paternal education (β = -0.168, $p = .004$), perceived stress (β = -0.137, $p = .017$), benevolent childhood experiences (β = -0.166, $p = .004$) and victimisation (β = -0.105, $p = .036$) were all weak, negative predictors (see Table 6). These findings indicate that older age, higher levels of maternal education, high pandemic-related stress, benevolent childhood experiences, and high parental involvement and parenting warmth predict better individual resilience. Furthermore, high exposure to violence and experiences of victimisation, higher levels of paternal education, and higher perceived stress predict worse individual resilience in an individual. Relational resilience was found to only have five significant predictors, still, however, with largely weak effect (see Table 7).

Table 7

Results of Linear Regression Analysis with Relational Resilience (CYRM-28 Individual) as Outcome

Variable	*p*	Standardised β	Unstandardised β	*SE*	95% CI	
					LL	UL
Age	.246	0.05	0.12	0.11	-0.09	0.33
Mother's Highest Level of Education	**.000**	0.21	0.88	022	0.44	1.31
Father's Highest Level of Education	**.007**	-0.15	-0.64	0.24	-1.11	-0.18
School	.689	-0.02	-0.33	0.83	-1.96	1.30
Tertiary Education	.397	0.04	0.54	0.63	-0.71	1.78
Pandemic Stress (PSQ)	.179	0.07	0.01	0.01	-0.01	0.03
Strengths and Difficulties (SDQ)	.669	0.02	0.01	0.03	-0.05	0.08
Perceived Stress (PSS)	.065	-0.10	-0.10	0.05	-0.20	0.01
Loneliness (LS)	.866	-0.01	-0.01	0.07	-0.16	0.13
Benevolent Childhood Experiences (BCES)	.181	-0.07	-0.46	0.34	-1.14	0.22
Parental Involvement (PS)	**.000**	0.25	0.65	0.14	0.37	0.93
Parenting Warmth (PW)	**.000**	0.36	1.46	0.21	1.04	1.88
Satisfaction with Life (SWLS)	.612	0.02	0.02	0.04	-0.06	0.10
Victimisation (VS)	.310	-0.05	-0.15	0.15	-0.44	0.14
Family Adversity (FAS)	.215	0.06	0.22	0.18	-0.13	0.57
Perception of Neighbourhood (CRPN)	**.003**	0.14	0.15	0.05	0.05	0.25

$p < 0.05$ (2-tailed); $p < 0.01$ (2-tailed)

Relational resilience was predicted by both maternal and paternal education, parental involvement and parenting warmth and one's perception of neighbourhood. Once again, all

predictors had weak effects, whether positive or negative. Maternal education (β = 0.211, p < .001), parental involvement (β = 0.249, p < .001), parenting warmth (β = 0.357, p < .001) and neighbourhood perception (β = 0.140, p = .003) were positive predictors of relational resilience. Paternal education, however, was a negative predictor of relational resilience (β = -0.153, p = .007) (see Table 7). These findings suggest that higher maternal education, high parental involvement, parenting warmth, and good neighbourhood perceptions predict better relational resilience in an individual, while higher paternal education predicts worse relational resilience. Finally, contextual resilience was found to be significantly predicted by seven independent variables (see Table 8).

Table 8

Results of Linear Regression Analysis with Contextual Resilience (CYRM-28 Individual) as Outcome

					95% CI	
Variable	*p*	Standardised β	Unstandardised β	*SE*	LL	UL
Age	.122	0.07	0.22	0.14	-0.06	0.49
Mother's Highest Level of Education	**.001**	0.18	0.94	0.29	0.37	1.51
Father's Highest Level of Education	**.021**	-0.14	-0.73	0.31	-1.34	-0.11
School	.501	-0.03	-0.73	1.09	-2.87	1.41
Tertiary Education	.807	-0.01	-0.20	0.83	-1.84	1.43
Pandemic Stress (PSQ)	**.000**	0.22	0.05	0.01	0.03	0.08
Strengths and Difficulties (SDQ)	.262	0.05	0.05	0.04	-0.04	0.14
Perceived Stress (PSS)	**.005**	-0.16	-0.20	0.07	-0.33	-0.06
Loneliness (LS)	.352	0.06	0.09	0.10	-0.10	0.28
Benevolent Childhood Experiences (BCES)	**.000**	-0.21	-1.66	0.45	-2.55	-0.78

Variable	*p*	Standardised β	Unstandardised β	*SE*	95% CI LL	95% CI UL
Parental Involvement (PS)	**.000**	0.25	0.84	0.19	0.47	1.21
Parenting Warmth (PW)	.117	0.09	0.44	0.28	-0.11	0.99
Satisfaction with Life (SWLS)	.413	0.04	0.04	0.05	-0.06	0.15
Victimisation (VS)	.068	-0.09	-0.36	0.19	-0.74	0.03
Family Adversity (FAS)	.150	-0.07	-0.34	0.23	-0.80	0.12
Perception of Neighbourhood (CRPN)	**.001**	0.16	0.22	0.07	0.09	0.35

Contextual resilience was found to be predicted by both maternal and paternal education, pandemic-related stress, perceived stress, benevolent childhood experiences, parental involvement, and perceptions of one's neighbourhood. As in all the above cases, predictors showed weak effects. Paternal education (β = -0.136, p = .021), perceived stress (β = -0.164, p = .005) and benevolent childhood experiences (β = -0.211, p < .001) were all negative predictors of contextual resilience (see Table 8). This suggests that lower levels of paternal education, less perceived stress and having had fewer benevolent childhood experiences predict a better contextual resilience outcome. Furthermore, maternal education (β = 0.177, p = .001), pandemic-related stress (β = 0.120, p < .001), parental involvement (β = 0.252, p < .001) and perception of neighbourhood (β = 0.158, p = .001) were all positive predictors of contextual resilience (see Table 8). These findings suggest that higher maternal education, higher pandemic-related stress, good parental involvement, and a good perception of one's neighbourhood predict better contextual resilience.

Although all five outcome variables did have multiple significant predictors, all predictors had weak effects on the respective outcome variables. Overall, depression and relational resilience were found to have the lowest number of significant predictors, at five each, with overall and individual resilience having the highest number of significant

predictors, at nine each. Parental involvement was the only variable that significantly predicted all five outcome variables, indicating that high parental involvement predicted low depression and high resilience across all levels. Perceived stress was the next most common predictor, predicting all outcome variables except relational resilience. The highest levels of both biological parents' education were significant predictors across all levels of resilience, however, higher maternal education predicted better resilience, while paternal education showed the opposite effect. Both pandemic-related stress and benevolent childhood experiences were significant predictors of overall, individual, and contextual resilience while parenting warmth commonly predicted overall, individual, and relational resilience and perception of neighbourhood was a common predictor of overall, relational, and contextual resilience. Finally, victimisation by community was the only independent variable that only predicted one outcome, namely, individual resilience, suggesting that less exposure to violence predicted better individual resilience, only.

Chapter 4: Discussion

This research report aimed to identify possible predictors of risk and resilience outcomes of young, emerging young adults living in disadvantaged communities in South Africa. The proxy for resilience comprises three facets that make up resilience, namely individual, relational, and contextual resilience resources. The proxy for risk was participants' scores on the Beck Depression Inventory, second edition (BDI-II). After the removal of participants due to missing data, significant outliers, and lack of knowledge of an important independent variable (namely maternal and paternal level of education) the final regression analyses consisted of 244 participants.

It was originally thought that, due to the study population belonging to a disadvantaged community, they may be less resilient than some of the samples discussed in the literature review. However, this sample showed high levels of resilience across all three facets, namely, individual, relational, and contextual resilience resources. This suggests that socioeconomic disadvantage does not necessarily equate with being non-resilient and that economic-related stressors may, under certain circumstances, actually promote resilience development (Marshall et al., 2022). Although resilience is defined as one's ability to sustain favourable functioning despite difficulty, it is also developed as one overcomes challenges and difficulties. Some researchers refer to organisational resilience, the capacity to rearrange and reorganise resources that have been disrupted by some form of crisis, so that one may successfully navigate the crisis and emerge stronger (Barton et al., 2020). Individuals who come from disadvantaged backgrounds may therefore have more 'practice' engaging in the rearranging of resources (Beckmann & Klein, 2022). There is evidence that people who have experienced greater challenges may have better-established resilience than their peers from more advantageous positions (Gladwell, 2015; Southwick & Charney, 2012). More specifically, although COVID-19 may have presented greater challenges to those in disadvantaged positions, it is possible that they are also more adept at overcoming them.

However, the level of resilience itself was not the aim of this research, which was to identify possible predictors of resilience and risk. In this regard, several significant relationships were identified between the outcome variables, namely depression (as a proxy for risk), individual, relational, and contextual resilience which comprise overall resilience, and various possible predictors. Significant correlations were identified between depression and the demographic variables of gender, age, both maternal and paternal levels of education, school attendance, and tertiary education, as well as personal or experience-related variables such as pandemic-related stress, overall perceived stress, loneliness, perceived strengths and difficulties, childhood experiences, parental involvement, parenting warmth, satisfaction with life, experiences of victimisation, family adversity and perception of one's neighbourhood.

Similarly, there were several significant associations between demographic or personal variables and resilience outcomes. Across all three resilience measures, significant correlations were identified with age, both maternal and paternal education, school attendance, tertiary education, pandemic-related stress, overall perceived stress, strengths and difficulties, loneliness, childhood experiences, parental involvement and parenting warmth, satisfaction with life, victimisation, and family adversity and finally one's neighbourhood perception. There was a tendency for the same independent variables to correlate significantly across all four outcome measures, however, opposing directionally for resilience outcomes and depression outcomes, suggesting that those related positively to resilience, were negatively related to risk. The exception was gender, which was not significantly correlated with the resilience scales.

Although there were many significant correlations, several were weak. Those independent variables with the strongest correlations across all four outcome variables were pandemic-related stress as measured by the Pandemic Stress Questionnaire (PSQ, Kujawa et al., 2020), perceived stress, as measured by the Perceived Stress Scale (PSS, Cohen et al., 1983), loneliness as measured by the UCLA Loneliness Scale (Russel et al., 1978), childhood

experiences, as measured by the Benevolent Childhood Experiences Scale (BCES, Narayan et al., 2015), as well as parental involvement (Ruchkin et al., 2004) and parenting warmth (Ruchkin et al., 2004) and perception of neighbourhoods (CRPN; Ruchkin et al., 2004). These variables had correlations ranging from -0.41 to 0.67, with one exception of 0.39 for the CRPN with individual resilience, while other correlations were largely 0.4 and below. Despite these significant correlations, there were not as many significant predictors, and these had very weak effects.

Depression was significantly predicted by gender, where being female was more likely to lead to depression, than being male. This finding was expected and is in line with the hypothesis and previous literature, both on depression prevalence (Albert, 2015; Shi et al, 2021), as well as all three of the related COVID-19 studies discussed in the literature review chapter (Kimhi et al., 2020; Panzeri et al., 2021; Shilton et al., 2021). This result is possibly due to the stereotypical nature of how men and women tend to experience and express emotional difficulty, where men tend to be generally less expressive about their psychological difficulties than women (Chaplin, 2014; Simon & Nath, 2004). Furthermore, women, at least in nuclear family settings, tend to take on more household and family responsibility than men and the changes in household dynamics and overall circumstances during COVID-19 may have placed added strain on the young women contributing to the running of their households. Shilton *et al*. (2021) also observed that the presence of children in the home added to this stress on women, which could be a potential contributing factor in this study as well. However, there is no data pertaining to parental status of individuals in this study and therefore such deductions cannot be definitively made but the possibility of the additional impact of young women having their own children or having to take on a similar role in helping with younger siblings should be considered. Since there was no significant relationship between employment status and gender, no deductions can be made about whether employment or lack thereof plays a role in this gender difference.

Following gender, age was the next hypothesised predictor based on previous findings and was a significant predictor of individual resilience, but not of depression. Findings suggest that the younger an individual is, the less resilient they are likely to be. Once again, this finding was expected based on previous studies which had similar findings (Kimhi et al., 2020; Panzeri et al., 2021; Shilton et al., 2021). This was attributed to older adults having experienced more throughout their lives and as a result developing coping mechanisms making it easier to navigate challenges as these arise (Charles, 2010). Age does not appear to impact one's relational or contextual resilience as age is a personal factor that is not influenced or impacted by external factors.

Neither school attendance nor tertiary education were significant predictors of either of the outcome variables. While school attendance was not expected to have much impact due to the sample being emerging young adults and largely beyond school age, level of education appeared significant in two of the studies that informed this one and was therefore expected to show some result in this study. Interestingly, these two studies had opposing findings. Shilton *et al*. (2021) identified that higher levels of education resulted in better resilience, while Panzeri *et al.* (2021) found the opposite to be true. Panzeri *et al.*'s finding was attributed to two potential factors; that better-educated individuals may have better knowledge of the risks and dangers of a disease such as COVID-19, and that more highly educated individuals may have jobs that allow, or require, them to work from home, presenting new stressors during this time. While our findings would be in line with those of Shilton *et al.* (2021) that having tertiary education is associated with lower levels of depression and better resilience, the effect size was small which might explain the lack of significant prediction. Another possible explanation is that we only know whether participants in our study had some form of tertiary education or not, but not the nature of that tertiary education, nor the level, type of qualification, or quality of that education. We are therefore unable to make deductions as to whether the level of education may lead to better

knowledge about the pandemic or whether participants' level of education aligns with their income or working environment.

Besides own level of education, previous studies highlighted that maternal level of education may play a significant role in an individual's emotional/cognitive development (Jackson et al., 2017; Sonego et al., 2012). Although none of the three studies examined in the literature review discussed parental education as a factor, both maternal and paternal levels of education were significantly correlated with all four of the outcome variables. This suggests that the higher one's mother and/or father's level of education, the less depressed, and more resilient an individual is likely to be. However, neither maternal nor paternal level of education significantly predicted depressive outcomes, but both predicted resilience, across all three facets. This suggests that although risk and resilience are related and opposing constructs, the risk proxy depression cannot simply be regarded as the inverse of resilience, but rather that the constructs are qualitatively different. What is most intriguing about this finding, is that, as expected, higher maternal education predicts better resilience across all domains, however, in contrast, paternal education was negatively associated, suggesting that higher paternal education predicts poorer resilience outcomes. We can make possible deductions that higher levels of parental education may result in a better ability to assist children with their own schooling or education, place greater importance on education and impart their own knowledge to their children. Higher maternal education, in particular, results in better care of the home and the family, better care taken with regard to health and nutritional practices and better emotional intelligence (Jackson et al., 2017; Luthra, 2007). While the same can be speculated in terms of fathers, it is possible that, in this sample, there may be less interaction with one's father than mother. This may be due to a lack of relationship with one's father, which may be attributed to the large proportion (almost half) of South African children who grow up with an absent father (Eddy et al., 2013). This statistic is even higher for Black South Africans the population sampled in the current study,

where 68.3% of those surveyed did not live with their biological fathers as children. While the state of family dynamics for this study's participants is unknown, many more participants did not know their father's highest level of education in comparison to their mother's which may be an indicator of a lack of relationship or interaction with one's father. Developmental researchers suggest that the dynamic and interaction between a child and parent is the primary mediator between the level of parental education and the resulting effect on children (Prince-Embury, 2009) which may give some indication as to why this opposing relationship has presented.

While there is no specific data on each parent's involvement, parental involvement in general, as measured by a parent or guardian's knowledge about the participant's activities, was found to be a significant predictor of all outcome variables. This suggests that knowing that someone is aware of one's whereabouts and activities may promote a sense of security and comfort and suggests at least some degree of care and possible support which may increase one's capacity for resilience as well as lower feelings of loneliness and depression.

Further, elaborating on a parent's role or contribution to an individual's outcome, parenting warmth was identified as a significant predictor of individual and relational resilience but not depression. Parenting warmth goes beyond the mere knowledge of one's activities but is categorised by love, care, and connection. Experience of parental warmth and care predicts better individual and relational resilience. This is attributed to the development of better emotional adjustment and coping ability that occurs as a result of positive, and warm parental involvement (Anwer et al., 2019; Choe et al., 2012; Simons & Conger, 2007). Furthermore, communication, particularly that which is sensitive and supportive, between caregivers and children plays a key role in resilience development and as a protective factor for mental health (Marshall et al., 2022).

Related to parental involvement and warmth, are childhood experiences, specifically those relating to feelings of own safety and comfort, received from others such as parents,

teachers, peers, and their community (Narayan et al., 2015). Childhood experiences are expected to play a role in general development, and more specifically the development of resilience. Resilience is built up through overcoming difficulty, and the challenges encountered during childhood may have a greater impact on resilience building than challenges faced later in life (Werner, 2013). Responses from the Benevolent Childhood Experiences Scale (BCES, Narayan et al., 2015) showed that childhood experiences were negative predictors of individual, and contextual resilience, where individuals who had fewer benevolent experiences growing up, developed a stronger sense of resilience which carried through into early adulthood.

Looking at opposite influences, victimisation by one's community, as measured by experiences of direct exposure to violence by the individual through being threatened or physically harmed (Richters & Martinez, 1993; Ruchkin et al., 2004) negatively predicted individual resilience. This suggests that high experiences of victimisation by community or exposure to violence predict poor individual resilience (Nurius et al., 20219. While this seems contradictory to the finding that overcoming challenges builds resilience (Werner, 2013), this may be explained by the nature and source of the challenges, as well as the ages at which this victimisation may have first been encountered (Nurius et al., 2019). Further, if an individual experiences victimisation from a young age, potentially during a developmentally sensitive period, and then repeatedly throughout their years into early adulthood, a vulnerability to such an experience may manifest (Ben-Shlomo & Kuh, 2002; Schilling et al., 2007; Nurius et al, 2019). As discussed above, in relation to parental involvement, feeling protected or secure can be beneficial to resilience development, and a lack thereof and fear of one's own community may hinder that development, specifically on an individual level.

Turning to participants' current experiences, one variable that was a significant predictor of most outcomes was perceived stress. As expected, and hypothesised, perceived stress positively predicts depression and negatively predicts resilience, across all domains

except relational resilience (where there was no significant effect). Stress and anxiety are tightly associated (Garber & Weersing, 2010) and stress, anxiety and depression often occur together (Morales et al., 2022; Shilton et al., 2021). In other studies, anxiety, in combination with depression was used as a measure of risk or in opposition to resilience (Panzeri et al., 2021). In Shilton *et al*.'s (2021) study, those who were categorised as resilient were less likely to experience stress and anxiety. Similarly, Kimhi *et al.* (2020) identified that stability in functioning during adverse experiences was negatively associated with stress, anxiety, and depression. Our findings thus corroborate experiences of general stress as opposing resilience outcomes. Stress would impact individual resilience as well as contextual, but not relational resilience, due to the fact that stress is a personally experienced emotion that is also impacted by one's context and environment (Lazarus & Launier, 1978).

Specific to the COVID-19 pandemic, this study also assessed pandemic-related stress. This construct referred to events or difficulties that arose as a direct result of the COVID-19 pandemic, including unexpected separation from family, financial strain, added responsibility, job loss, issues around remote work, conflict, or discrimination, as well as health concerns, accessibility to health care and death (Kujawa et al., 2020). Participants' level of pandemic-related stress was assessed on how severely they perceived their experience with these difficulties. Pandemic-related stress was not a significant predictor of depressive outcomes but did significantly predict individual and contextual resilience. High levels of pandemic-related stress were associated with high individual and contextual resilience, contrary to the study's hypothesis. In contrast, Panzeri *et al*. (2021) found no significant contribution from community variables to resilience, which they attributed to restricted social contact leading individuals to feel reliant on themselves above others. Kimhi *et al*. (2020) found significant negative correlations between individual and community resilience with both sense of danger and distress symptoms, i.e., the higher one's resilience, the lower one's level of distress and sense of danger. Furthermore, individual resilience was

found to predict the ability to cope with threats, while both community and national resilience (contextual) did not significantly predict, the ability to cope. Kimhi *et al.* (2020) suggested that this may be because COVID-19 primarily poses a threat to an individual's health where individual resilience may prove more effective.

There are several differences between the various studies that might account for the contrasting findings related to individual and contextual (community) resilience and pandemic-related stress. Firstly, although all three studies identified significant relationships between individual resilience and pandemic-related stress, they differed in terms of direction of the relationship. The Panzeri *et al.* (2021) and Kimhi *et al.* (2020) studies found negative relationships, while the current study found a positive relationship. Further research might shed light on these differences. Secondly, the Panzeri *et al.* (2021) and Kimhi *et al.* (2020) studies were conducted in the global North, where populations are typically more individualistic and less collectivist, unlike much of the African and South African population from which this study's sample is drawn, which tends to be collectivistic in nature (Cutrona et al., 2000, Höltge et al., 2021). Further, the sample of this study was socioeconomically disadvantaged, and less advantaged populations tend to rely more on their communities than more advantaged populations (Christens, 2012), suggesting greater importance and impact of community involvement and support in dealing with stressors generally (Höltge et al., 2021).

While communities seemingly play a significant role in resilience for this study, it is not only about the presence of a community but also the nature of the community and the perception of the community that an individual holds. This includes the individual's perception of their neighbourhood, as measured by safety and cleanliness, as well as the nature of the people within the community (friendliness and support), drug exposure, access to resources, and whether there are racial or cultural discrepancies (Ruchkin et al., 2004). In the current study, this perception correlated significantly with, and predicted, resilience both relationally and contextually, so that more positive perceptions of neighbourhood or

community resulted in better resilience, in line with our hypothesis. This again differs from the findings of Panzeri *et al.* (2021) and Kimhi *et al.* (2020) who did not find significant associations with resilience and community factors, but as mentioned before, is likely due to the more collectivist nature of South African populations than those of Israel and Italy.

Consequently, community and context appear to impact resilience, for the specific sample of this study. Our final two independent variables, namely loneliness and satisfaction with life, suggest that more individually focused factors may have a greater relationship with depression (risk) than resilience. While these two variables were significantly correlated with all measures of resilience, neither one was a significant predictor of any aspect of resilience. However, both significantly predicted depression. Loneliness is a commonly occurring symptom or contributor to feelings of depression and this outcome was expected (van Winkel et al., 2017; von Känel et al., 2021). In the case of the COVID-19 pandemic, there was a lot of isolation which may have increased individuals' experiences of loneliness, thus leading to greater feelings of depression.

Although it was hypothesised that satisfaction with life would be positively associated with resilience, it was not a significant predictor, although it negatively predicted depression, suggesting that higher satisfaction predicts less depression. As discussed previously, depression, as a proxy for risk, is qualitatively different from resilience, and this may be why resilience was not predicted by satisfaction with life.

Both loneliness and satisfaction with life are key factors that relate back to stages five and six, namely identity versus role confusion, and intimacy versus isolation, of Erikson's psychosocial stages of development (Erikson, 1950, 1968, 1980), as previously discussed. This particular sample would be engaging with these stages and so might experience difficulty overcoming the challenges in each stage due to the COVID-19 pandemic and the related restrictions, as discussed in the literature review. However, most participants fell into the low-moderate levels of both loneliness and depression, as measured by the UCLA

Loneliness Scale (Russel et al., 1978) and the BDI-II (Beck et al., 1996). This suggests that, on average, there is no real concern over lack of interaction, or severe loneliness or depression within relationships, as failure to overcome stage six might suggest (Erikson, 1968, 1980). This may be a factor that presents at a later stage, which could only be evaluated longitudinally. Furthermore, satisfaction with life scores were, on average, moderate. Once again this suggests no concern for feeling disappointed or dissatisfied with one's life, as failure of stage five suggests. It cannot be concluded that individuals did not experience difficulty in these stages (as the scores discussed represent the average of the sample), and we do not have longitudinal data, nor data pertaining to one's feelings or identity or personal relationships. However, we can speculate that these lockdowns and isolation periods may have not impacted the participants as greatly as may have been expected.

While some of the findings confirmed our hypotheses, others showed the opposite relationship, and others were not supported. Contrary to expectations based on previous literature, employment status, tertiary education, perceived strengths and difficulties and family adversity did not predict resilience (Kimhi et al., 2020; Panzeri et al., 2021; Shilton et al., 2021).

Overall, this study identified several significant predictors of both depression (risk) and resilience outcomes. There were a few variables that significantly predicted all, or multiple outcome variables, however, with differing directionally for risk and resilience outcome variables. This study also suggests that, following the Ecological Resilience Model (Bennett & Windle, 2015), individual, relational, and contextual factors comprise resilience and that they are interrelated.

Limitations and Suggestions for Future Study

Our study began with a sample size of 351 and resulted in a final sample of 244 participants due to missing data, significant outliers, and a lack of information from participants about key variables. This is a relatively small sample and restricts the

generalisability of results. While a strength of this study is that it was conducted in a developing country, where resilience, specifically pandemic-related is under-researched, the results are limited regarding generalisability. The inclusion criteria were specific to South African, emerging, young adults, living in disadvantaged communities, and results can therefore only be generalised as far as this specific type of population. This, however, provides the opportunity for further research, both in different populations within South Africa, as well as in other developing populations globally.

While the use of secondary data does present some limitations, due to the nature of this study being nested in the greater RYSE study, these limitations were easily managed.

The effect sizes of the resulting predictors following multiple regression analyses are all weak, possibly due to the small size of the sample, and need to be confirmed with further studies before drawing conclusions about such predictive relationships.

This study was cross-sectional and therefore cannot make causal conclusions, although this was never the intention. Longitudinal data would be beneficial in better establishing predictors of risk and resilience outcomes.

Conclusion

This study aimed to identify variables associated with, and predictive of, risk and resilience outcomes within a population of emerging, young South African adults, living in disadvantaged communities. This was done through the exploration of significant relationships between two outcome variables, depression, as a proxy for risk, and resilience, measured at an individual, relational, and contextual level, and various relevant socio-demographic variables.

Overall, the sample population exhibited low-moderate levels of depression, and on average displayed high levels of resilience. There were several significant and moderate relationships between relevant independent variables, including age, gender and education, pandemic-related and perceived stress, loneliness, parental involvement and warmth, childhood and community experiences, and the risk and resilience proxy variables, depression, and resilience (at the individual, relational and contextual levels).
Fewer significant predictors were identified for depression, and all three levels of resilience, however, with very weak effects. Depression was significantly predicted by gender, perceived stress, loneliness, satisfaction with life and parental involvement, with being female, having higher levels of perceived stress, stronger feelings of loneliness, dissatisfaction with life or lacking parental involvement predicted higher levels of depression.

All three levels of resilience were significantly predicted by both parents' level of education and parental involvement. Higher levels of maternal education predicted better resilience across all domains, while paternal education had the opposite effect. Higher parental involvement predicted higher resilience. Furthermore, perceived and pandemic-related stress as well as benevolent childhood experiences significantly predicted both individual and contextual resilience. Higher perceived stress predicted less resilience, while fewer benevolent childhood experiences and higher pandemic-related stress predicted better resilience. Holding more positive perceptions of one's neighbourhood significantly predicted

better relational and contextual resilience, while higher levels of parenting warmth predicted better individual and relational resilience. Age and victimisation by community uniquely predicted individual resilience where older age and less exposure to violence within one's community predict better individual resilience.

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Appendix

Appendix A - Gauteng Participant Flyer



The University of Pretoria is **doing research** about **resilience** (being ok when life is hard) and we need **your expertise**

Are You:

- 18-29 years old?
- Living in a disadvantaged/stressed community in Gauteng?
- Comfortable speaking/reading/writing English?

Do You:

- Have personal experience of COVID-19-related stress?
- Believe you are doing OK despite experiencing COVID-19-related stress?

If you **answered yes** to **ALL** these and would like more information about what participating in the study will entail, contact (whatsapp or please call me):

Phumzile: 079 138 8580

Appendix B - Participant Information Sheet



UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Faculty of Education

Who can volunteer for the study?
Anyone who:

- Is 18-29-years-old;
- is OK speaking English and can read and write in English;
- lives in a disadvantaged/stressed community in Gauteng;
- has personal experience of COVID-19-related stress; and
- believes they are doing OK despite the experience of COVID-19- related stress and the challenges of living in a disadvantaged/stressed community.

What are we doing in this part of the RYSE project? Broadly, we want to learn from you (and other people from the Pretoria area) what makes it possible for young people to be OK in life when they live in disadvantaged/stressed communities that are faced with COVID-19-related stressors. To learn this from you, we would **like you to complete a list of questions (also known as a survey)** about what you believe helps young people be OK when they live in stressed environments and are faced with COVID-19-related stressors. You can do this online or telephonically. We will also ask you to **make a drawing that shows your understanding of what** helps you/young people be OK when life is hard. We will ask you to write a brief explanation to help us understand what your drawing means. We will ask you to send us a photo/scan of the drawing and explanation. We will use what we learn from you and other young people to better understand what makes it possible for young people to be mentally healthy and to feel good. We want to use this understanding to make it possible for more people who live in communities that are stressed to be healthy and feel good, and we hope to guide how mental health practitioners and service providers support young people to be healthy and feel good.

How much time will participating take? The survey should take about 60-90 minutes of your time, and the drawing will take about 30 min.

Will it cost you anything to participate? No, there are no costs to participate. We will give you 50 MB to participate in the online survey and to send a photograph or scan of your drawing, OR if this is not possible, we will phone you for the survey at a time convenient to you.

Are there risks to participating? Based on the previous RYSE work, we don't think there are risks to participating. If any of the questions make you feel sad or worried, we will direct you to free-of-charge mental health services.

What are the benefits to participating? We will use what you teach us to inform mental health practitioners on how best to support young people. We will also make copies of the findings of the study available to local mental health organisations in your community (so, your community will also benefit from what you teach us).

How to enrol in the study? Please let us know if we can send you a consent form to complete so that we can enrol you in the study? The consent form will include a detailed description of the study for your records. Contact (whatsapp/plz call me) **Phumzile: 079 138 8580** She is a RYSE research assistant and will send you the consent forms.

Appendix C - Participant Consent Form



Faculty of Education

PARTICIPANT INVITATION AND CONSENT FORM

Survey and Draw-and-Write

(Young Adults, Gauteng)

We invite you to participate in a project called: *The multisystemic sources of human resilience to COVID-19-related stress: Learning from emerging adults in India and South Africa.* The short name of this project is **"Resilient Youth in Stressed Environments" or RYSE.**

Who are we? We are researchers from University of Pretoria (South Africa), the University of the Witwatersrand (South Africa), the North-West University (South Africa), the Bharathiar University (India), and Dalhousie University (Canada). Our contact details are at the end of this letter if you need them.

What are we doing in the Resilience to COVID-19-related stressors study?

Broadly, we want to learn from you (and other people from the Gauteng area) what makes it possible for young people to be OK when living in stressed environments or communities and faced with COVID-19-related stressors. To learn from you, we will ask you to complete a survey (a long list of questions), and to make a drawing to help us better understand what supports young people to be OK when life is hard.

We will use what we learn from you and other young people to better understand what makes it possible for young people to be healthy and to feel good. We want to use this understanding to make it possible for more young people living in stressed environments that are exposed to COVID-19-related stressors to be healthy and feel good, and we hope to guide how mental health practitioners and service providers support young people to be healthy and feel good.

The Research Ethics Committee of the Faculty of Health Sciences and the Research Ethics Committee of the Faculty of Education, University of Pretoria have allowed us to do this study (clearance number UP17/05/01). They know we will work carefully using South Africa's and international ethical rules (this is called the guidelines and principles of the international Declaration of Helsinki and the ethical guidelines of the National Health Research

Ethics Council). The committee will maybe want to look at the forms you sign (if you say yes to being in this study) to check that we did everything in the right way.

Why are we asking you to be part of this project?

Because you:

1. are between the ages of 18 and 29-years old;
2. are OK speaking English and can read and write in English;
3. live in a disadvantaged/stressed community in Gauteng;
4. have personal experience of COVID-19-related stress;
5. believe you are doing OK despite the experience of COVID-19- related stress and the challenges of living in a disadvantaged community (e.g., you are engaged in further education/training, or employed/actively seeking employment, or contributing meaningfully to your household [e.g., child-minding.

What do you need to know?

- You can say no. If you say no, there will be no problem, you don't need to give a reason.
- Even if you say yes now, it is OK for you to change your mind later and stop taking part
- If something (like drug use) makes it hard for you to understand clearly what this project is about, we will not be able to let you take part. In that case, we would encourage you to make use of the mental health services that are freely available. SADAG is available at 011 324 4837 from Monday to Sunday 8am to 8 pm or via their 24-Hour helpline 0800 456 789. Additionally, you can contact Lifeline Pretoria at 012 804 3619 or 0861 322 322, or Lifeline Johannesburg at 011 728 1347, or Lifeline Vaal Triangle at 016 428 1740 or 016 428 5959.

If you say yes, what will you be asked to do?

You will be asked to participate in two activities (described below).

Date & time	Place	Description
Date to be confirmed Time to be confirmed	Virtual/telephonic contact	We will ask you to answer a list of questions (called a survey) which you can do electronically via the internet on a device of your choice (such as a cell phone, tablet, laptop, or personal computer). Alternatively, a research assistant will be available to contact you and read the survey questions to you and they will record your responses on the online survey. This will take about 60-90 minutes.
Dates to be confirmed	Virtual/telephonic contact	We will ask you to make a drawing explaining what helps young people to be OK when faced with COVID-19-related stress. We will also ask you to write a couple of sentences explaining what your drawing says about what helps young people to be OK when faced with COVID-19-related stress. We will ask you to scan or take a photo of your drawing and the explanation and send it to us via email or WhatsApp. This will take about 30 minutes

What do you get out of this?

To thank you for completing the survey and making the drawing, we would like to offer you a R100 Shoprite/Checkers Money-market voucher. At the end of this study, a copy of the findings will be made available on the RYSE website (ryseproject.org). If you prefer, we can email you a copy. The findings will include guidelines about how young people can enable/sustain resilience (i.e., be OK when life is hard).

Can you get hurt by taking part?

We don't think that you can get hurt physically, but there are some other risks. We explain them below and what we will do to manage them.

Possible / Probable risks/discomforts	Strategies to minimise risk/discomfort
You may be asked some questions that could make you feel uncomfortable or be upsetting to you (E.g., Think about the most upsetting or frightening thing that happened to you in the past year. Where did it happen? How much did it bother you?).	If this happens you should let the researcher, or anyone of the contacts provided on this letter, know so that we can guide you to make use of the no-cost services at: **South African Depression and Anxiety Group** (SADAG), SMS: 31393 or 32312, WhatsApp Chat: 076 882 2775, or Call: 0800 21 22 23 or 0800 70 80 90 or 0800 456 789 or Suicide Helpline: 0800 567 567 OR **LifeLine Pretoria** 012 804 3619 or 0861 322 322 **LifeLine Pretoria** also provides face to face counselling (appointment only) and can be contacted at 012 804 1853 OR **LifeLine Johannesburg** 011 728 1347 or 0861 322 322 **LifeLine Alexandra** 011 443 3555 **LifeLine Soweto** 067 019 0845 or 074 129 6960 **WhatsApp counselling** 065 989 9238 OR **LifeLine Vaal Triangle** 016 428 1740 or 016 428 5959 OR **FAMSA** 012 460 0733/8 (218 Lange Street, Brooklyn Pretoria, GP 181). **FAMSA Johannesburg** 011 788 4784 (1 Cardigan Rd, Parkwood, 2195, Johannesburg, Gauteng, South Africa). **FAMSA Vaal** 016 933 8128 (52 Pres. Boshoff street, SE1, Vanderbijlpark, 1911, Gauteng, South Africa). However, because the focus of our study is on what and who contributes to young people doing well in life, even when their lives

	are hard, we believe that it is more likely that you won't experience much discomfort. Also, please remember that you do not have to answer any questions that make you feel uncomfortable.
Working in English could be tiring or difficult.	We don't think that language will be a problem. Still, if you prefer, we can arrange for a researcher who speaks your home language to conduct the survey with you.

What will happen to what you answer during the study?

We will upload the photograph/scan of the drawing and explanation that you send to us onto a password protected computer. Your survey answers will be captured electronically (e.g., a researcher will copy your answers onto a password-protected computer and store a copy on a password-protected computer). Only researchers directly involved in the project will have access to your survey answers and drawing/explanation. These data will be kept 15 years. These data will not be linked to your name.

We will allow university students/researchers who must complete research studies about resilience, adolescents, or stressed households/communities to use your survey and drawing data for their research. In other words: we also would like to use your data, confidentially and anonymously, for further research purposes, as the data sets are the intellectual property of the University of Pretoria. Further research may include secondary data analysis and using the data for teaching purposes. The confidentiality and privacy applicable to this study will be binding on future research studies.

The research team will use what was learned from you (and others like you) to write/lecture/speak about what makes it harder and easier for young people to be OK when life is hard. We will also compare what you tell us with what we have learnt from young people living in other communities in South Africa or overseas (e.g., Canada and India) and use this comparison to better understand what helps young people be OK when life is hard.

Who will see the forms you sign and what happens to them?

Only the South African Principal Investigator of this study [Linda Theron] and the research assistants working with you will have access to the consent forms you have signed. These forms will be stored in an office at the University of Pretoria. They will be stored for 15 years.

Will it cost you anything to take part in this study?

No, taking part in the study will not cost you anything. If you need data to complete the survey and draw- and-write activity, we will provide you with 50MB of data to complete these research activities.

Do you have questions to ask?

- If you have questions you can email Linda Theron at Linda.theron@up.ac.za or phone her at 012 420 6211. You can also contact the research assistant who works with Linda: Phumzile Kunene at 079 138 8580.
- You can contact the Faculty of Health Sciences Research Ethics Committee, University of Pretoria, telephone numbers 012 3563084 / 012 3563085 if you have any concerns or complaints that have not been adequately addressed by the researcher.
- You will receive a copy of this information and consent form for your own records.

Thank you very much for considering our invitation!

Linda, and the research team

Declaration by participant

By signing below, I ..... [full name] agree to take part in a research study named: *The multisystemic sources of human resilience to COVID-19-related stress: Learning from emerging adults in India and South Africa*

I say that:

- I have read and understood this information and consent form and it is written in a language with which I am fluent enough and comfortable.
- I have had a chance to ask questions to both the person obtaining consent, as well as the researcher (if this is a different person), and all my questions have been adequately answered.
- I understand that taking part in this study is **voluntary** (I can say no) and I have not been pressured to take part.
- I understand that what I contribute will be shared with national and international researchers involved in this project.
- I understand that what I contribute (what I answer/draw) could be reproduced publicly and/or quoted and that my full name will not be included in this.
- I agree that what I contribute can be used for further research or teaching purposes. I.e., my data can be used, confidentially and anonymously, for further research purposes, as the data sets are the intellectual property of the University of Pretoria. Further research may include secondary data analysis and using the data for teaching purposes. The confidentiality and privacy applicable to this study will be binding on future research studies.
- I understand that my identity will never be made known to people outside of the research team, though anonymity cannot be guaranteed.
- I understand that I may choose to leave the study at any time and that will not be a problem. I also understand that once researchers start to analyse the data (e.g., add what I answered to what everybody else answered to understand what most young people in my community think helps them do well in life) and/or the findings of the study are in the process of publication I cannot withdraw the information that I contributed to the study.

- I may be asked to leave the study before it has finished, if the researcher feels it is in my best interests.
- I may be contacted to participate in later stages of the research.

Signed at (*place*) ..... on (*date*) ..... 202_

....

Signature of participant **Signature of witness**

(Please mark your answer with an X)

You may contact me again	**Yes**	**No**
I would like a summary of the findings to be emailed to me	**Yes**	**No**

My contact details are:

Name & Surname: _____

Residential Address: _____

_____

Postal Address: _____

Age today: _____

Male / Female / Other: _____

Email: _____

Phone Number: _____

Cell Phone Number: _____

Facebook or other social media details: _____

In case the above details change, please contact the following person who knows me well and lives with me and who will help you to contact me:

Name & Surname:

_____

Phone/ Cell Phone Number /Email:

_____

Declaration by person obtaining consent

I *(name)* ..... declare that:

- I explained the information in this document to .....
- I encouraged him/her to ask questions and took adequate time to answer them.
- I am satisfied that he/she adequately understands all aspects of the research, as discussed above.
- I did/did not use an interpreter.

Signed at (*place*) ..... on (*date*) ..... 202_

....

Signature of person obtaining consent **Signature of witness**

Declaration by researcher

I *(name)* ..... declare that:

I explained the information in this document to .....

I encouraged him/her to ask questions and took adequate time to answer them.

- I am satisfied that he/she adequately understands all aspects of the research, as discussed above
- I did/did not use an interpreter.

Signed at (*place*) ..... on (*date*) ..... 202_

....

Signature of researcher **Signature of witness**

Appendix D – Survey Overview

RYSE Manual Revised - Survey overview

The survey comprises a total of **271 items**. These are divided into four broad domains (demographic, risk, resilience, and outcomes). The domains are a guide, but there could be analyses where a demographic variable is considered a risk, etc, so they are not fixed.

The demographic questions include **20 items** and enquires about the race of the respondent, their sex, sexuality, age, languages spoken, time spent in the community, and their school and/or work status.

The risk domain includes **116 items**. These items are drawn from the Pandemic Stress Questionnaire [**25 items**] (Kujawa et al., 2020), Strength and Difficulties Questionnaire [25 items] (developed by Goodman, 1997; Goodman et al, 1998), Perceived Stress Scale [10 items] (Cohen et al., 1983), UCLA Loneliness Scale [**10 items**] (Russell et al, 1978), the Victimisation by Community subscale of the Exposure to Violence scale [**7 item**s] (Richters & Martinez, 1993; Ruchkin et al., 2004), the Family Adversity scale [**10 items**] (adapted from Labella et al., 2017), the Perception of Neighbourhood scale [**13 items**] (Ruchkin et al., 2004), and questions created specifically for this survey that address perception of community spaces, and parent and household status [**16 items**].

The resilience domain includes **56 items**. Resilience is measured using the Rugged Resilience Measure [**10 items**] (Jefferies et al, 2021), the three subscales of the Child and Youth Resilience Measure – [**28 items**] (CYRM-28; Ungar & Liebenberg, 2011). The three CYRM sub-scales assess (1) individual resources including personal skills (such as ability to problem solve, cooperation, and awareness of personal strengths), peer support, and social skills (2) relationships with parents or primary caregivers including physical and psychological caregiving, and (3) contextual resources that facilitate connection to culture, the role of religious and spiritual beliefs, and engagement with and relevance of education. The alpha coefficients from a recent study of Canadian and South Africa youth were .79, .83 and .81 respectively. An additional question is proposed that extends the last question of the CYRM, probing identification with community. An additional question was added.

We will also use a new scale developed by our partners, the Benevolent Childhood Experiences scale [**10 items**] (Narayan et al., 2015) which is meant to complement the study of Adverse Childhood Experiences. Parenting Scale subscale [4 items] (adapted from Ruchkin et al., 2004). Parenting Warmth [**3 items**] (adapted from Ruchkin et al., 2004). There is an additional question created specifically for this survey that addresses perception of community spaces [**1 item**].

The outcomes domain includes **79 items** and enquires about school engagement, depression, peer group support, and risky behaviours. These items are drawn from the Warwick-Edinburgh mental well-being scale **[14 items]** (Tennant et al, 2007), Satisfaction with life scale **[5 items]** (Diener et al, 1985; Pavot et al, 1991; Pavot & Diener, 1993; Pavot & Diener, 2008), School Engagement scale **[33 items]** (Lam et al., 2014) (α =.78), a new question probing perception of grades/marks, the Delinquency subscale **[6 items]** (Geldhof et al., 2014), the Beck Depression Inventory **[21 items]** (BDI-II; Beck et al., 1996), one new question about bullying and one about unprotected sexual intercourse.

Appendix E – Demographic Questions

The demographic questions include 20 items and enquires about the race of the respondent, their sex, sexuality, age, languages spoken, time spent in the community, and their school and/or work status.

1.	What race do you identify with [what race are you]?	1 = White 2 = Black 3 = Coloured 4 = Indian 5 = Other (specify)
2.	What is your gender?	1 = Female 2 = Male 3 = Other
3.	How old are you?	
4.	What type of house do you live in most of the time?	1 = Formal brick house 2 = RDP house 3 = Flats 4 = Back room [outside room] 5 = Rent a single room in a house 6 = Wendy house [wood flat] 7 = Shack 8 =Caravan 9 = On the street 10 = Hostel 11 = Other (specify) _____
5.	What is the **MAIN** source of water at your everyday home?	1 = Tap inside the house 2 = Water from tap in own yard 3 = Water collected from community taps 4 = Water purchased from a vendor/shop 5 = Water from municipal truck 6 = Other (specify) _____

6.	What is the **MAIN** source you use to cook with at your everyday home?	1 = Electricity 2 = Gas 3 = Paraffin 4 = Wood 5 = Coal 6 = Crop waste 7 = Animal dung 8 = Other (specify) _____
7.	Do you **SOMETIMES** use something else to cook at your everyday home?	1 = Yes 2 = No If yes, please list what you sometimes use to cook with _____ _____ _____
8.	What type of toilet do you use at your everyday house?	1 = Flush 2 = Pit latrine [a hole in the ground] 3 = Mobile toilet 4 = Bucket toilet 5 = No toilet 6 = Other (specify) _____
9.	Where is the toilet at your everyday house?	1 = Inside the house 2 = Outside of the house 3 = Both
10.	Does someone run a business at the house/property where you live most of the time?	1 = Yes 2 = No If Yes, what type of business is it?

		_____
11.	Are you at school?	1 = Yes 2 = No (if no, **skip to 17**)
12.	If yes, which school are you at?	
13.	If yes, which grade are you in?	
14.	"My teachers teach well"	1 = Totally agree 2 = Sort of agree 3 = Sort of disagree 4 = Totally disagree
15.	"My teachers treat me well" (e.g., are friendly)	1 = Totally agree 2 = Sort of agree 3 = Sort of disagree 4 = Totally disagree
16.	Do you have a paying part-time job (whilst you are still in school)?	1 = Yes 2 = No
If you are <u>still in school</u>, skip to <u>Section B</u>		
17..	If you are no longer in school, when did you leave school for the last time?	Date [mm/yyyy] _____
18.	Do you have any tertiary education?	1 = Yes (How many years did you complete? _____) 2 = No
19..	If you have tertiary education, please specify	1 = Trade qualification 2 = FET 3 = University qualification
20.	What do you do with your time now? Mark ALL the choices that apply.	1 = Unemployed, looking for work 2 = Unemployed but NOT looking for work 3 = Temporary/seasonal labour

		4 = Part-time employed 5 = Full-time employed 6 = Self employed 7 = Completing a skills development course (e.g., learnership) 8 = Other (specify _____)

Appendix F – Pandemic Stress Questionnaire (Kujawa et al., 2020)

The Pandemic Stress Questionnaire is a 25-item scale that measures the subjective experience of the exposure to stressful events due to COVID-19 within emerging adults. The questionnaire measures pandemic stress across six sub-scales namely: General life disruption (Items 1-6), interpersonal (items 7-11), financial (items 12-14), education/professional goals (items 15-17) health of the individual (items 18-22) and health of others (items 23-25). Participants answer yes or no to each question, and then for affirmative questions rate the severity from 1 (not at all) to 5 (extremely bad).

Below is a list of events related to the pandemic that may or may not have happened to you. Please decide whether you have had each of these experiences as a result of the recent coronavirus pandemic.

For each event which has happened, please decide how bad it was when it happened to you.

When rating how bad each event was when it happened, please consider how much of a negative impact it had on your life, how often the event occurred, and how long it was a problem for you.

	Events related to the Coronavirus pandemic	**Did this happen to you?**
1.	I had difficulty obtaining basic supplies because of the coronavirus pandemic (e.g., food, medicine, toilet paper).	Yes No *If yes: How bad was this event?* *1=not at all bad* *2 =slightly bad* *3 =somewhat bad* *4 = very bad* *5 = extremely bad*
2.	I had to move unexpectedly because of the coronavirus pandemic.	Yes No *If yes: How bad was this event?* *1=not at all bad* *2 =slightly bad* *3 =somewhat bad*

		4 = very bad *5 = extremely bad*
3.	I was unexpectedly separated from family, friends, or others close to me because of the coronavirus pandemic (e.g., due to moves or travel restrictions).	Yes No *If yes: How bad was this event?* *1=not at all bad* *2 =slightly bad* *3 =somewhat bad* *4 = very bad* *5 = extremely bad*
4.	I was unable to be with close family, friends, or partners because of the coronavirus pandemic.	Yes No *If yes: How bad was this event?* *1=not at all bad* *2 =slightly bad* *3 =somewhat bad* *4 = very bad* *5 = extremely bad*
5.	I had problems with my visa or the Student and Exchange Visitor Information System because of the coronavirus pandemic (e.g., unable to renew).	Yes No *If yes: How bad was this event?* *1=not at all bad* *2 =slightly bad* *3 =somewhat bad* *4 = very bad* *5 = extremely bad*
6.	I had to cancel travel or experienced a major disruption in travel plans because of the coronavirus pandemic.	Yes No

		If yes: How bad was this event? *1=not at all bad* *2 =slightly bad* *3 =somewhat bad* *4 = very bad* *5 = extremely bad*
7.	I had to cancel or postpone important events because of the coronavirus pandemic (e.g., events for a club, sporting events, major celebrations).	Yes No *If yes: How bad was this event?* *1=not at all bad* *2 =slightly bad* *3 =somewhat bad* *4 = very bad* *5 = extremely bad*
8.	I had to take on additional responsibilities caring for others (e.g., children, other family members) due to the coronavirus pandemic.	Yes No *If yes: How bad was this event?* *1=not at all bad* *2 =slightly bad* *3 =somewhat bad* *4 = very bad* *5 = extremely bad*
9.	I experienced significant financial strain due to the pandemic (e.g., due to travel, purchasing supplies, paying for housing).	Yes No *If yes: How bad was this event?* *1=not at all bad* *2 =slightly bad* *3 =somewhat bad* *4 = very bad* *5 = extremely bad*

10.	I temporarily or permanently lost a job or had my work hours greatly reduced due to the coronavirus pandemic.	Yes No *If yes: How bad was this event?* *1=not at all bad* *2 =slightly bad* *3 =somewhat bad* *4 = very bad* *5 = extremely bad*
11.	My workload increased substantially because of the coronavirus pandemic.	Yes No *If yes: How bad was this event?* *1=not at all bad* *2 =slightly bad* *3 =somewhat bad* *4 = very bad* *5 = extremely bad*
12.	Someone I rely on for financial support (e.g., partner, parent) temporarily or permanently lost a job or had their work hours greatly reduced because of the coronavirus pandemic.	Yes No *If yes: How bad was this event?* *1=not at all bad* *2 =slightly bad* *3 =somewhat bad* *4 = very bad* *5 = extremely bad*
13.	I was unable to complete important requirements for my education or professional goals due to the coronavirus pandemic (e.g., coursework, taking the SAT or GRE, thesis).	Yes No *If yes: How bad was this event?* *1=not at all bad* *2 =slightly bad*

		3 =somewhat bad *4 = very bad* *5 = extremely bad*
14.	I had problems with online courses and/or remote work (e.g., slow connection, no computer or internet access, major differences in time zone).	Yes No *If yes: How bad was this event?* *1=not at all bad* *2 =slightly bad* *3 =somewhat bad* *4 = very bad* *5 = extremely bad*
15.	I had conflicts or arguments with my partner or family members due to coronavirus (e.g., conflicts about living arrangements, shared workspace, schedule expectations).	Yes No *If yes: How bad was this event?* *1=not at all bad* *2 =slightly bad* *3 =somewhat bad* *4 = very bad* *5 = extremely bad*
16.	I experienced racism or discrimination due to the coronavirus pandemic.	Yes No *If yes: How bad was this event?* *1=not at all bad* *2 =slightly bad* *3 =somewhat bad* *4 = very bad* *5 = extremely bad*
17.	I had symptoms of COVID-19 (e.g., cough, fever, trouble breathing) but was unable to get tested.	Yes No

		If yes: How bad was this event? *1=not at all bad* *2 =slightly bad* *3 =somewhat bad* *4 = very bad* *5 = extremely bad*
18.	I was tested for COVID-19.	Yes No *If yes: How bad was this event?* *1=not at all bad* *2 =slightly bad* *3 =somewhat bad* *4 = very bad* *5 = extremely bad*
19.	I was diagnosed with COVID-19.	Yes No *If yes: How bad was this event?* *1=not at all bad* *2 =slightly bad* *3 =somewhat bad* *4 = very bad* *5 = extremely bad*
20.	I had difficulty accessing or paying for physical or mental health care for myself or my dependents due to the coronavirus pandemic.	Yes No *If yes: How bad was this event?* *1=not at all bad* *2 =slightly bad* *3 =somewhat bad* *4 = very bad*

		5 = extremely bad
21.	I was quarantined for 2 weeks or longer due to possible exposure to COVID-19 or due to international travel.	Yes No *If yes: How bad was this event?* *1=not at all bad* *2 =slightly bad* *3 =somewhat bad* *4 = very bad* *5 = extremely bad*
22.	Someone close to me had symptoms of COVID-19 (e.g., cough, fever, trouble breathing) but was unable to get tested.	Yes No *If yes: How bad was this event?* *1=not at all bad* *2 =slightly bad* *3 =somewhat bad* *4 = very bad* *5 = extremely bad*
23.	Someone close to me was diagnosed with COVID-19.	Yes No *If yes: How bad was this event?* *1=not at all bad* *2 =slightly bad* *3 =somewhat bad* *4 = very bad* *5 = extremely bad*
24.	Someone close to me was quarantined for 2 weeks or longer due to possible exposure to COVID-19 or due to international travel.	Yes No *If yes: How bad was this event?*

		1=not at all bad *2 =slightly bad* *3 =somewhat bad* *4 = very bad* *5 = extremely bad*
25.	Someone close to me died from COVID-19.	Yes No *If yes: How bad was this event?* *1=not at all bad* *2 =slightly bad* *3 =somewhat bad* *4 = very bad* *5 = extremely bad*

Appendix G –Strengths and Difficulties Questionnaire (Goodman, 1997; Goodman et al, 1998)

Scoring 0=Not True 1=A bit true 2=Very True (Reversed scores 32, 36, 39, 46, 50)

Sum items to get scores.

To what extent do the following statements about feelings and behaviour apply to you? There are no right or wrong answers.

26.	I try to be nice to other people. I care about their feelings	1=Not true 2=A bit true 3=Very true
27.	I am restless, I find it hard to sit down for long	1=Not true 2=A bit true 3=Very true
28.	I get a lot of headaches, stomach-aches or sickness	1=Not true 2=A bit true 3=Very true
29.	I usually share with others, for example food or drink	1=Not true 2=A bit true 3=Very true
30.	I get very angry and often lose my temper	1=Not true 2=A bit true 3=Very true
31.	I would rather be alone than with other people	1=Not true 2=A bit true 3=Very true
32.	I am generally willing to do what other people want	1=Not true 2=A bit true 3=Very true
33.	I worry a lot	1=Not true 2=A bit true

		3=Very true
34.	I am helpful if someone is hurt, upset or feeling ill	1=Not true 2=A bit true 3=Very true
35.	I am constantly fidgeting or squirming	1=Not true 2=A bit true 3=Very true
36.	I have at least one good friend	1=Not true 2=A bit true 3=Very true
37.	I fight a lot. I can make other people do what I want	1=Not true 2=A bit true 3=Very true
38.	I am often unhappy, depressed or tearful	1=Not true 2=A bit true 3=Very true
39.	Other people generally like me	1=Not true 2=A bit true 3=Very true
40.	I am easily distracted, I find it difficult to concentrate	1=Not true 2=A bit true 3=Very true
41.	I am nervous in new situations. I easily lose confidence	1=Not true 2=A bit true 3=Very true
42.	I am kind to children	1=Not true 2=A bit true 3=Very true
43.	I am often accused of lying or cheating	1=Not true

		2=A bit true 3=Very true
44.	Other people pick on me or bully me	1=Not true 2=A bit true 3=Very true
45.	I often offer to help others (family members, friends, colleagues)	1=Not true 2=A bit true 3=Very true
46.	I think before I do things	1=Not true 2=A bit true 3=Very true
47.	I take things that are not mine from home, work or elsewhere	1=Not true 2=A bit true 3=Very true
48.	I get along better with older people than with people of my own age	1=Not true 2=A bit true 3=Very true
49.	I have many fears, I am easily scared	1=Not true 2=A bit true 3=Very true
50.	I finish the work I'm doing. My attention is good	1=Not true 2=A bit true 3=Very true

Appendix H - Perceived Stress Scale (Cohen et al., 1983)

The Perceived Stress Scale measures psychological stress across a number of demographics including sex, age, income, education amongst others. Scoring 0 = Never; 1 = Almost Never; 2 = Sometimes; 3 = Fairly often; 4 = Very often.

Scores are obtained by reversing the scores on the four positive items (29, 30, 32, 33), e.g., 0=4, 1=3, 2=2, etc. then summing across all 10 items.

In the last month, how often have you…

51.	Been upset because of something that happened unexpectedly?	0=Never 1=Almost never 2=Sometimes 3=Fairly often 4=Very often
52.	Felt that you were unable to control the important things in your life?	0=Never 1=Almost never 2=Sometimes 3=Fairly often 4=Very often
53.	Felt nervous and stressed?	0=Never 1=Almost never 2=Sometimes 3=Fairly often 4=Very often
54.	Felt confident about your ability to handle your personal problems?	0=Never 1=Almost never 2=Sometimes 3=Fairly often 4=Very often
55.	Felt that things were going your way?	0=Never 1=Almost never 2=Sometimes 3=Fairly often

		4=Very often
56.	Found that you could not cope with all the things that you had to do?	0=Never 1=Almost never 2=Sometimes 3=Fairly often 4=Very often
57.	Been able to control irritations in your life?	0=Never 1=Almost never 2=Sometimes 3=Fairly often 4=Very often
58.	Felt that you were on top of things?	0=Never 1=Almost never 2=Sometimes 3=Fairly often 4=Very often
59.	Been angered because of things that were outside of your control?	0=Never 1=Almost never 2=Sometimes 3=Fairly often 4=Very often
60.	Felt difficulties were piling up so high that you could not overcome them?	0=Never 1=Almost never 2=Sometimes 3=Fairly often 4=Very often

Appendix I – UCLA Loneliness Scale (Russell et al, 1978)

Sum items to get a total score. Higher scores indicate higher levels of loneliness. **Please rate how often you have experienced the following…**		
61.	I lack companionship	1=Never 2=Rarely 3=Sometimes 4=Often
62.	There is no one I can turn to	1=Never 2=Rarely 3=Sometimes 4=Often
63.	I am an outgoing person	1=Never 2=Rarely 3=Sometimes 4=Often
64.	I feel left out	1=Never 2=Rarely 3=Sometimes 4=Often
65.	I feel isolated from others	1=Never 2=Rarely 3=Sometimes 4=Often
66.	I can find companionship when I want it	1=Never 2=Rarely 3=Sometimes 4=Often
67.	I am unhappy being so withdrawn	1=Never 2=Rarely

		3=Sometimes 4=Often
68.	People are around me about not with me	1=Never 2=Rarely 3=Sometimes 4=Often

Appendix J – Victimisation by Community Subscale of Exposure to Violence Scale

(Richters & Martinez, 1993; Ruchkin et al., 2004).

Richters and Martinez's original 7-item scale was adapted for the SAHA study. (Ruchkin et al., 2004). In the SAHA study, the authors used the 7-item scale twice, asking first if the respondent had seen the events happen to someone, and then secondly if it had happened to them personally.

Circle the number of times the following things have happened to *you in the past year*. **Please do *NOT* include things you have only seen or heard about on TV, radio, the news, or in the movies.**						
69.	I have been chased by gangs or individuals.	None	1-2 Times	3-5 Times	6-9 Times	10+ Times
70.	I have been **threatened** with serious physical harm by someone [e.g., threatened to beat me or stab me].	None	1-2 Times	3-5 Times	6-9 Times	10+ Times
71.	I have been beaten up or mugged.	None	1-2 Times	3-5 Times	6-9 Times	10+ Times
72.	I have been attacked or stabbed with a knife.	None	1-2 Times	3-5 Times	6-9 Times	10+ Times
73.	I have been seriously wounded (e.g., needed stitches) in an incident of violence (e.g., a fight, a strike).	None	1-2 Times	3-5 Times	6-9 Times	10+ Times
74.	I have been shot or shot at with a gun.	None	1-2 Times	3-5 Times	6-9 Times	10+ Times
75.	I have been threatened or harmed by someone because of my race or ethnicity/culture.	None	1-2 Times	3-5 Times	6-9 Times	10+ Times

Appendix K - Family Adversity Scale (Labella et al., 2017).

This list is adapted from Labella et al (Labella et al., 2017).

The items can be summed to get a single figure of family adversity.

We made a number of changes to the wording of the items. The original scale was also meant to be completed by a parent, while our wording is changed to be self-report. We also adapted the wording to be more inclusive of atypical family units and more understandable to youth:

- question 76: “death of a parent” now “death of someone who has looked after you for a long time”;
- question 77: “death of a brother or sister” now “death of a person who was like a brother or sister”;
- question 78: “…fights or severe relationship problems between parents and adults taking care of him or her” now “…fights (verbal or physical) or severe relationship problems between parents/parent-figures/caregivers?”;
- question 79, 80, 82, 83: “…parents” now “…parents/parent-figures/caregivers”;
- question 81: “…mental illness” now “…severe mental illness”.

Please answer the following questions. Have you…

76.	Experienced the death of someone who has looked after you for a long time?	1 = Yes 2 = No
77.	Experienced the death of a person who was like a brother or sister?	1 = Yes 2 = No
78.	Lived in a home with fights or severe relationship problems between your caregivers/guardians?	1 = Yes 2 = No
79.	Experienced the divorce or permanent separation of your caregivers/guardians?	1 = Yes 2 = No
80.	Lived with a caregiver/guardian who had a serious alcohol or drug problem?	1 = Yes 2 = No
81.	Lived with a caregiver/guardian who had a mental illness?	1 = Yes 2 = No
82.	Lived with a caregiver/guardian who had a serious physical illness?	1 = Yes 2 = No
83.	Had a caregiver/guardian who was in prison?	1 = Yes 2 = No
84.	Lived in foster care?	1 = Yes

		2 = No
85.	Been separated from your caregiver/guardian for more than 1 month?	1 = Yes 2 = No

Appendix L - The 10-item Perception of Neighbourhood Scale (Ruchkin et al., 2004).

This scale was used in the SAHA study with a Cronbach's alpha of .82 in the US sample.

Across the items, we changed "neighbourhood" to "neighbourhood/community" to be more inclusive.

The original scale is made up of 7 positively worded items that form an Attachment to Neighbourhood subscale and 3 negatively worded items to do with "racial conflict", but since we have made quite a number of adaptations it would be best to just calculate an overall score, where questions 88, 89, 91, 92 and 94 are negatively scored. Higher scores mean a more positive perception.

Please choose the statement you agree with:

86.	It is safe to walk alone in my neighbourhood/community after dark.	1 = Always False 2 = Mostly False 3 = Mostly True 4 = Always True
87.	In my neighbourhood/community there are good places to spend time with my friends.	1 = Always False 2 = Mostly False 3 = Mostly True 4 = Always True
88.	There is litter, broken glass or garbage on the streets, on sidewalks, or in yards in my neighbourhood/community.	1 = Always False 2 = Mostly False 3 = Mostly True 4 = Always True
89.	I feel safe in my neighbourhood/community.	1 = Always False 2 = Mostly False 3 = Mostly True 4 = Always True
90.	My neighbourhood/community looks nice.	1 = Always False 2 = Mostly False 3 = Mostly True 4 = Always True
91.	I like spending time in my neighbourhood/community.	1 = Always False 2 = Mostly False 3 = Mostly True 4 = Always True

92.	Some people sell or use drugs in my neighbourhood/community.	1 = Always False 2 = Mostly False 3 = Mostly True 4 = Always True
93.	People on the streets in my neighbourhood/community are friendly.	1 = Always False 2 = Mostly False 3 = Mostly True 4 = Always True
94.	People in my neighbourhood/community are willing to help each other.	1 = Always False 2 = Mostly False 3 = Mostly True 4 = Always True
95.	In my neighbourhood/community there are problems because of racial or cultural differences.	1 = Always False 2 = Mostly False 3 = Mostly True 4 = Always True
96.	In my neighbourhood/community, people are happy when others succeed	1 = Always False 2 = Mostly False 3 = Mostly True 4 = Always True
97.	In my neighbourhood/community, people normally share information about how they are able to succeed	1 = Always False 2 = Mostly False 3 = Mostly True 4 = Always True
98.	Because there are limited resources in my neighbourhood/community, I have to compete with others for resources	1 = Always False 2 = Mostly False 3 = Mostly True 4 = Always True

Appendix M – Parent and Household Status

Items 99-108 explores family risk/protective factors that were created for this survey. Items 99-102 explore mother/mother-figure factors and 103-108 explore father/father-figure factors. There are currently no plans to combine data from these items. **Please choose the most relevant answer about your family…**		
99.	What is/was your biological mother's highest level of education?	1 = No schooling 2 = Less than primary school completed 3 = Primary school completed 4 = Some secondary school completed 5 = Secondary school completed 6 = Tertiary education completed 7 = Do not know
100.	Is your biological mother alive?	1 = Yes 2 = No (if no, **skip to 104**) 3 = Do not know
101.	If **YES**, does your biological mother live at home with you?	1 = Yes 2 = No
102.	If **NO**, why does your biological mother not live at home with you?	
103	Is your biological mother currently employed?	1 = Yes 2 = No 3 = Do not know
104	What is/was your biological father's highest level of education?	1 = No schooling 2 = Less than primary school completed 3 = Primary school completed 4 = Some secondary school completed 5 = Secondary school completed 6 = Tertiary education completed 7 = Do not know
105.	Is your biological father alive?	1 = Yes 2 = No (if no, **skip to 109**) 3 = Do not know
106.	If YES, does your biological father live in your	1 = Yes

	household?	2 = No
107.	If **NO**, why does your biological father not live in your household?	
108.	Is your biological father currently employed?	1 = Yes 2 = No 3 = Do not know
Items 109-116 explore household and employment factors and were created for this survey. There are currently no plans to combine data from these items.		
109.	How many people (including you) live in your everyday home?	
110.	How many of these people are 17 or younger?	
111.	How many of the adults who live in your everyday home are employed?	
112.	What is your everyday home **MAIN/BIGGEST** source of income? Choose only the main one.	1= Salaries /commission 2= Income from a business 3= Maintenance 4= Pensions 5= Social grants 6= Sales of farm products and services 7= Other (specify _____)
113.	How would you say your school marks are/were?	1 = Well below average 2 = Below average 3 = Average 4 = Somewhat above average/good 5 = Well above average/excellent
114.	What was the highest grade you last completed/passed?	1 = Grade 5 or less 2 = Grade 6-8 3 = Grade 9-10 4 = Grade 11 5 = Grade 12
115.	Are there one or more places in your community that you fear, regard as unsafe and tend to avoid?	1.Yes 2.No.
116.	If yes, please say where/what these place/s are:	

	a) _____	How often do you need to go to that place? 1. Every day 2. 6-7 days a week 3. 4-5 days a week 4. 2-3 days a week 5. 1 day a week 6. Less than once a week like 1 or 2 times a month 7. Never
	b) _____	How often do you need to go to that place? 1. Every day 2. 6-7 days a week 3. 4-5 days a week 4. 2-3 days a week 5. 1 day a week 6. Less than once a week like 1 or 2 times a month 7. Never
	c) _____	How often do you need to go to that place? 1. Every day 2. 6-7 days a week 3. 4-5 days a week 4. 2-3 days a week 5. 1 day a week 6. Less than once a week like 1 or 2 times a month 7. Never

Appendix N - Child and Youth Resilience Measure (CYRM-28) (Ungar & Liebenberg, 2011).

The wording is as proposed by the original authors, except:

- Item 11: "…people I look up to" is now "…people I can respect in life", per the equivalent item in the Adult Resilience Measure (ARM-28).
- Item 12: We expanded this from "I cooperate with people around me" to "I cooperate well with people who are close to me".
- Item 13: "Getting an education is…" is now "Getting an education and/or improving qualifications/skills is…", which is roughly the equivalent item from the ARM-28;
- Item 15: "my parent(s)/caregiver(s) watch me closely" is now "my family have usually supported me throughout life" per the equivalent ARM-28 item;
- Item 16: "my parent(s)/caregiver(s) know a lot about me" now "my family know a lot about me" per the equivalent ARM-28 item;
- Item 17: "…there is enough to eat" now "…I can get food to eat" per the equivalent ARM-28 item;
- Item 21: "people think that I am fun to be with" now "people like to spend time with me";
- Item 22: "…family/caregiver(s)…" now "…family/partner…" per the equivalent ARM-28 item;
- Item 26: "I feel I belong at my school" now "I feel I belong in my community" per the equivalent ARM-28 item;
- Item 30: we removed "becoming an adult" per the equivalent ARM-28 item;
- Item 34: we removed "/caregiver(s)" per the equivalent ARM-28 item;
- Item 36: "/caregiver(s)" now "/partner's" per the equivalent ARM-28 item.

The CYRM can be scored to get a single resilience score. It can also be broken down into 3 subscales: Individual resilience (items 12, 18, 21, 23, 31, 24, 28, 14, 25, 30, 35), Relational resilience (items 15, 17, 16, 22, 27, 34, 36) and Contextual resilience (items 19, 32, 33, 13, 26, 11, 20, 29, 37, 38, and now 39).

Please rate your agreement with the following statements:

11.	I have people I can respect in my life.	Not at all	A little	In-between a little and quite a lot	Quite a lot	A lot
12.	I work together well with people who are close to me.	Not at all	A little	In-between a little and quite a lot	Quite a lot	A lot

13.	Getting/improving my qualifications or skills is important to me	Not at all	A little	In-between a little and quite a lot	Quite a lot	A lot
14.	I know how to behave in different social situations (e.g., at home and with friends).	Not at all	A little	In-between a little and quite a lot	Quite a lot	A lot
15.	My family have usually supported me throughout life.	Not at all	A little	In-between a little and quite a lot	Quite a lot	A lot
16.	My family know a lot about me.	Not at all	A little	In-between a little and quite a lot	Quite a lot	A lot
17.	If I am hungry, I can get food to eat.	Not at all	A little	In-between a little and quite a lot	Quite a lot	A lot
18.	I try to finish what I start.	Not at all	A little	In-between a little and quite a lot	Quite a lot	A lot
19.	Spiritual beliefs help me to be strong.	Not at all	A little	In-between a little and quite a lot	Quite a lot	A lot
20.	I am proud of my ethnic/cultural background.	Not at all	A little	In-between a little and quite a lot	Quite a lot	A lot
21.	People like to spend time with me	Not at all	A little	In-between a little and quite a lot	Quite a lot	A lot
22.	I talk to my family about how I feel.	Not at all	A little	In-between a little and quite a lot	Quite a lot	A lot
23.	I am able to solve problems without harming myself or others (for example, by using drugs and/or	Not at all	A little	In-between a little and quite a lot	Quite a lot	A lot

	being violent).					
24.	I feel supported by my friends.	Not at all	A little	In-between a little and quite a lot	Quite a lot	A lot
25.	I know where to go in my community to get help.	Not at all	A little	In-between a little and quite a lot	Quite a lot	A lot
26.	I feel I belong in my community.	Not at all	A little	In-between a little and quite a lot	Quite a lot	A lot
27.	My family stands by me during difficult times.	Not at all	A little	In-between a little and quite a lot	Quite a lot	A lot
28.	My friends stand by me during difficult times.	Not at all	A little	In-between a little and quite a lot	Quite a bit	A lot
29.	I am treated fairly in my community.	Not at all	A little	In-between a little and quite a lot	Quite a lot	A lot
30.	I have opportunities/chance to show others that I can act responsibly.	Not at all	A little	In-between a little and quite a lot	Quite a lot	A lot
31.	I know my own strengths/what I am good at	Not at all	A little	In-between a little and quite a lot	Quite a lot	A lot
32.	I participate in organised religious activities.	Not at all	A little	In-between a little and quite a lot	Quite a lot	A lot
33.	I think it is important to support my community.	Not at all	A little	In-between a little and quite a lot	Quite a lot	A lot
34.	I feel safe when I am with my	Not at all	A little	In-between a	Quite a	A lot

	family.			little and quite a lot	lot	
35.	I have opportunities to develop/use skills that will be useful later in life (like job skills and skills to care for others).	Not at all	A little	In-between a little and quite a lot	Quite a lot	A lot
36.	I enjoy my family's cultural and family traditions.	Not at all	A little	In-between a little and quite a lot	Quite a lot	A lot
37.	I enjoy my community's traditions.	Not at all	A little	In-between a little and quite a lot	Quite a lot	A lot
38.	I am proud to be a part of South Africa	Not at all	A little	In-between a little and quite a lot	Quite a lot	A lot

Appendix O - The 10-item Benevolent Childhood Experiences Scale (Narayan et al., 2015).

This scale can be summed to give a single protective factor score, where higher scores are positive. The items and wording are as proposed by the original study authors, except for phrasing to include present as well as past tense (I.e., “Have you had…” vs. “Did you have…”). Additionally, we expanded items 39 and 45 to “parent/parent-figure/caregiver”, fitting with other parts of the survey. **While growing up (during the first 18 years of your life):**		
39.	Have you had at least one caregiver/guardian whom you felt safe with?	1 = Yes 2 = No
40.	Have you had at least one good friend?	1 = Yes 2 = No
41.	Have you had beliefs that gave you comfort?	1 = Yes 2 = No
42.	Have you liked school?	1 = Yes 2 = No
43.	Have you had at least one teacher who cared about you?	1 = Yes 2 = No
44.	Have you had good neighbours?	1 = Yes 2 = No
45.	Have you had an adult (not a caregiver/guardian or the person from #39) who could give you support and advice?	1 = Yes 2 = No
46.	Have you had opportunities to have a good time?	1 = Yes 2 = No
47.	Have you liked yourself or felt comfortable with yourself?	1 = Yes 2 = No
48.	Have you had a regular/daily home routine, like regular meals and a regular bedtime?	1 = Yes 2 = No

Appendix P - The 4-item Parenting Scale Subscale [4 items] (adapted from Ruchkin et al., 2004).

If living with a parent/ caregiver/guardian, when you are not home (e.g., after school/work), do they usually know:					
49.	Where you are?	Never	Rarely [Scarce]	Sometimes	Most of the time
50.	Who you are with?	Never	Rarely [Scarce]	Sometimes	Most of the time
51.	What you are doing?	Never	Rarely [Scarce]	Sometimes	Most of the time
52.	When you are coming back?	Never	Rarely [Scarce]	Sometimes	Most of the time

Appendix Q - The 3-item Parenting Warmth [3 items] (adapted from Ruchkin et al., 2004).

Item 56 and 57 measures perception of community spaces. **For the next questions, is there a parent/ caregiver/guardian who…**					
53.	Is proud of you?	Never	Rarely [Scarce]	Sometimes	Most of the time
54.	Shows their love for you?	Never	Rarely [Scarce]	Sometimes	Most of the time
55.	Makes you feel good when you are with them?	Never	Rarely [Scarce]	Sometimes	Most of the time

Appendix R - Satisfaction with Life Scale (Diener et al, 1985; Pavot et al, 1991; Pavot et al, 1993; Pavot & Diener, 2008)

Each item is to be scored from 1–7, which allows a total score on the scale from 5 (low satisfaction) to 35 (high satisfaction)

Please rate your agreement with the following statements…								
15.	In most ways my life is close to my ideal	Strongly disagree	Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly agree
16.	The conditions of my life are excellent	Strongly disagree	Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly agree
17.	I am satisfied with my life	Strongly disagree	Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly agree
18.	So far I have gotten the important things I want in life	Strongly disagree	Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly agree
19.	If I could live my life over, I would change almost nothing	Strongly disagree	Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly agree

Appendix S - The 21-item Beck Depression Inventory-II; BDI-II (Beck et al., 1996).

These items are as the original authors intended. It was thought that the former was too extreme for this age group. These items can be summed to give an overall depression score (indicative, not diagnostic/clinically derived), where higher scores indicate higher levels of depression. **This part of the questionnaire consists of 21 groups of statements. Please read each group of statements carefully, and then pick out the *one statement* in each group that best describes the way you have been feeling during the *past two weeks, including today*. Circle the number beside the statement you have picked. If several statements in the group seem to apply equally well, circle the highest number. Be sure that you do not choose more than one statement for any group, including Item *68* (Changes in Sleeping Pattern) and Item *70* (Changes in Appetite).**	
53.	0 = I do not feel sad 1 = I feel sad much of the time 2 = I am sad all the time 3 = I am so sad or unhappy that I can't stand it
54.	0 = I am not discouraged about my future 1 = I feel more discouraged about my future than I used to be 2 = I do not expect things to work out for me 3 = I feel my future is hopeless and will only get worse
55.	0 = I do not feel like a failure 1 = I have failed more than I should have 2 = As I look back, I see a lot of failures 3 = I feel I am a total failure as a person
56.	0 = I get as much pleasure as I ever did from the things I enjoy 1 = I don't enjoy things as much as I used to 2 = I get very little pleasure from the things I used to enjoy 3 = I can't get any pleasure from the things I used to enjoy
57.	0 = I don't feel particularly guilty / Mostly; I don't feel guilty 1 = I feel guilty over many things I have done or should have done 2 = I feel quite guilty most of the time 3 = I feel guilty all of the time
58.	0 = I don't feel I am being punished [by life] 1 = I feel I may be punished [by life] 2 = I expect to be punished [by life] 3 = I feel I am being punished [by life]
59.	0 = I feel the same about myself as always 1 = I have lost confidence in myself 2 = I am disappointed in myself 3 = I do not like myself
60.	0 = I don't blame myself more than usual 1 = I blame myself more than I used to

	2 = I blame myself for all of my faults 3 = I blame myself for everything bad that happens
61.	0 = I don't have any thoughts of killing myself 1 = I have thoughts of killing myself, but I would not do it 2 = I would like to kill myself 3 = I would kill myself if I had the chance
62.	0 = I don't cry any more than I used to 1 = I cry more than I used to 2 = I cry over every little thing 3 = I feel like crying, but I can't
63.	0 = I am no more stressed than usual 1 = I feel more stressed than usual 2 = I am so stressed that it's hard to stay still 3 = I am so stressed that I have to keep moving or doing something
64.	0 = I have not lost interest in other people or activities 1 = I am less interested in other people or things than before 2 = I have lost most of my interest in other people or things 3 = It's hard to get interested in anything
65.	0 = I make decisions almost as well as always 1 = I find it more difficult to make decisions than usual 2 = I have **much greater** difficulty in making decisions than I used to 3 = I have trouble making any decisions
66.	0 = I do not feel I am worthless 1 = I don't consider myself as worthwhile and useful as I used to 2 = I feel more worthless compared to other people 3 = I feel completely worthless
67.	0 = I have as much energy as ever 1 = I have less energy than I used to have 2 = I don't have enough energy to do very much 3 = I don't have enough energy to do anything
68.	0 = I have not experienced any change in my sleeping pattern 1a = I sleep a bit more than usual 1b = I sleep a bit less than usual 2a = I sleep a lot more than usual 2b = I sleep a lot less than usual 3a = I sleep most of the day 3b = I wake up 1-2 hours early and can't get back to sleep
69.	0 = I am not more short-tempered than usual 1 = I am more short-tempered than usual 2 = I am much more short-tempered than usual 3 = I am short-tempered all the time

70.	0 = I have not experienced any change in my appetite 1a = My appetite is a bit less than usual 1b = My appetite is a bit greater than usual 2a = My appetite is much less than before 2b = My appetite is much greater than usual 3a = I have no appetite at all 3b = I want food all the time
71.	0 = I can concentrate as well as always 1 = I can't concentrate as well as usual 2 = It's hard to keep my mind on anything for long 3 = I feel I can't concentrate on anything
72.	0 = I am not more tired than usual 1 = I get more tired more easily than usual 2 = I am too tired to do a lot of the things I used to do 3 = I am too tired to do most of the things I used to do
73.	0 = I have not noticed any recent change in my interest in sex 1 = I am less interested in sex than I used to be 2 = I am much less interested in sex now 3 = I have lost interest in sex completely

Appendix T – University of Pretoria Ethics Clearance - RYSE



UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Faculty of Education

Amendment

Ethics Committee

20 April 2021

Prof LC Theron

Dear Prof LC Theron

REFERENCE: UP 17/05/01 THERON

We received the proposed amendments to your existing project. Your amendment is thus **approved**. The decision covers the entire research process, until completion of the study report, and not only the days that data will be collected. The approval is valid for two years for a Masters and three for Doctorate.

The approval by the Ethics Committee is subject to the following conditions being met:

1. The research will be conducted as stipulated on the application form submitted to the Ethics Committee with the supporting documents.
2. Proof of how you adhered to the Department of Basic Education (DBE) policy for research must be submitted where relevant.
3. In the event that the research protocol changed for whatever reason the Ethics Committee must be notified thereof by submitting an amendment to the application (Section E), together with all the supporting documentation that will be used for data collection namely; questionnaires, interview schedules and observation schedules, for further approval before data can be collected. Non-compliance implies that the Committee's approval is null and void. The changes may include the following but are not limited to:
    - Change of investigator,
    - Research methods any other aspect therefore and,
    - Participants.

The Ethics Committee of the Faculty of Education does not accept any liability for research misconduct, of whatsoever nature, committed by the researcher(s) in the implementation of the approved protocol.

Upon completion of your research you will need to submit the following documentations to the Ethics Committee for your

Clearance Certificate:

- Integrated Declaration Form (Form D08),
- Initial Ethics Approval letter and,
- Approval of Title.

Please quote the reference number UP 17/05/01 THERON in any communication with the Ethics Committee.

Best wishes

Prof Funke Omidire
Chair: Ethics Committee
Faculty of Education

Room 3-65, Level 3, Aldrel Building
University of Pretoria, Private Bag X20
Hatfield 0028, South Africa
Tel +27 (0)12 420 5656
Email edu.ethicsadmin@up.ac.za
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Appendix U - University of the Witwatersrand Ethics Certificate

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

SCHOOL OF HUMAN AND COMMUNITY DEVELOPMENT ETHICS COMMITTEE
CONSTITUTED UNDER THE UNIVERSITY HUMAN RESEARCH ETHICS COMMITTEE (NON-MEDICAL)

CLEARANCE CERTIFICATE:	**PROTOCOL NUMBER: MAPSYC-22-02W**
PROJECT TITLE:	Predictors of COVID-related risk and resilience in South African young adults.
INVESTIGATOR	Benvenuti Sabrina (1906612)
SCHOOL/DEPARTMENT OF INVESTIGATOR	SHCD/Psychology
DATE CONSIDERED	26 May 2022
DECISION OF THE COMMITTEE	Approved unconditionally
RISK LEVEL	No Risk
EXPIRY DATE	31 December 2024

ISSUE DATE OF CERTIFICATE 11 August 2022 **CHAIRPERSON** (Dr Nkululeko Nkomo)

cc: Prof. Kate Cockcroft (Supervisor)

DECLARATION OF INVESTIGATOR

To be completed in duplicate and **ONE COPY** returned to the Chairperson of the School/Department ethics committee.

I fully understand the conditions under which I am are authorized to carry out the abovementioned research and I guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to resubmit the protocol to the Committee.

_____ **Signature** **Date** _____/_____/_____

PLEASE QUOTE THE PROTOCOL NUMBER ON ALL ENQUIRIES

Appendix V – University of the Witwatersrand Ethics Waiver Letter

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

HUMAN RESEARCH ETHICS COMMITTEE (NON-MEDICAL)

Registration number: REC-101114-044

SCHOOL OF HUMAN AND COMMUNITY DEVELOPMENT ETHICS COMMITTEE

Ethics clearance / waiver number: **MAPSYC-22-02W**

27 July 2022

Re: **Sabrina Benvenuti (1906612)**

To whom it may concern,

Sabrina Benvenuti (1906612) is currently registered as a Master of Arts in Psychology student at the School of Human and Community Development, University of the Witwatersrand, Johannesburg. This letter is to confirm that, at the time of writing Sabrina Benvenuti does not need ethical clearance for her study entitled "*Predictors of COVID-related risk and resilience in South African young adults*". This decision has been reached based upon a description of the project supplied by Sabrina Benvenuti to the School of Human and Community Development Ethics Committee, constituted as a subcommittee of the University Human Research Ethics Committee (Non-Medical), which has been evaluated by the subcommittee chair. This decision has then been ratified by the University Human Research Ethics Committee (Non-Medical). If, however, Sabrina Benvenuti changes the methods of data collection and analysis for this project, this decision may no longer be valid. If such changes take place, this should be communicated to the Human and Community Development Ethics Committee.

Please feel free to contact me should you require any further information.

Thank you.

Yours sincerely,



Name of School ethics chair: Prof. Zaytoon Amod

Shaun Schoeman (Senior Administrative Officer)
Solomon Mahlangu House, 10th Floor, Room 10004, Jorissen Street, Braamfontein, Johannesburg
Private Bag 3, Wits 2050
T + 27(0)11 717 1408 | **E** Shaun.Schoeman@wits.ac.za | hrecnon-medical@wits.ac.za
www.wits.ac.za/research/about-our-research/ethics-and-research-integrity/

Appendix W - Data Permission Sheet

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Faculty of Education

10 March 2022

To whom it may concern

My letter confirms that Sabrina Benvenuti (student number: 1906612) has permission to use the quantitative data set generated in the study titled, 'The multisystemic sources of human resilience to COVID-19-related stress: Learning from emerging adults in India and South Africa' [short title: RYSE-SAIn; ethical clearance: UP17/05/01]. This use is for the purpose of completing her research project under the supervision of Professor Kate Cockcroft (who is a co-investigator in the aforementioned study). Sabrina has signed the requisite declaration of ethical responsibility (as specified by the Faculty of Education Ethics Committee, University of Pretoria).

Sincerely



Linda Theron
Principal Investigator, RYSE-SAIn
Professor, Department of Educational Psychology
Linda.theron@up.ac.za
+27827831728

Appendix X - Declaration Form

Student/RA DETAILS

Surname	Benvenuti
Name	Sabrina
ID number	9912270149088
Email address	1906612@students.wits.ac.za / sabrinabenvenuti14@gmail.com

PERSONAL DECLARATION OF RESPONSIBILITY

Title of research project: The multisystemic sources of human resilience to COVID-19-related stress: Learning from emerging adults in India and South Africa

Short title: RYSE-SAIA

1. I/we declare that I am/we are cognisant of the goals of the Research Ethics Committee in the Faculty of Education to
   - ❑ develop among students and researchers a high standard of ethics and ethical practice in the conceptualisation and conduct of educational research;
   - ❑ cultivate an ethical consciousness among scholars especially in research involving human respondents; and
   - ❑ promote among researchers a respect for the human rights and dignity of human respondents in the research process.

2. I/We subscribe to the principles of
   - ❑ *voluntary participation* in research, implying that the participants might withdraw from the research at any time.
   - ❑ *informed consent*, meaning that research participants must at all times be fully informed about the research process and purposes, and must give consent to their participation in the research.
   - ❑ *safety in participation* put differently, that the human respondents should not be placed at risk or harm of any kind e.g. research with young children.
   - ❑ *privacy*, meaning that the *confidentiality* and *anonymity* of human respondents should be protected at all times.
   - ❑ *trust*, which implies that human respondents will not be subjected to any acts of deception or betrayal in the research process or its published outcomes.

3. I/we understand what plagiarism entails and am/are aware of the University's policy in this regard. I/we undertake not to make use of another person's previous work without acknowledgment or to submit it as our own. I/we also undertake not to allow anyone to copy our work with the intention of using it as their own work.

4. I/we understand that the data collected/analysed in the course of RYSE-SAIA is the institutional property of the University of Pretoria and I/we undertake to transfer all raw data/analyses and documents related to the research for safekeeping as required by the Faculty of Education. I/we undertake not to share the data with any person, either in part of in full. I/we undertake to keep the data safe (i.e., only on a password protected computer kept in a secure location).

5. I/we understand that any amendment to the approved protocol needs to be submitted to the Ethics Committee for review prior to data collection. Non-compliance implies that approval will be null and void.

6. I/we undertake to abide by the POPI act.

Sabrina Benvenuti		09/03/2022
Applicant	**Signature**	**Date**

Ethics Reference: UP 17/05/01 THERON 20-02

Appendix Y – Normality Testing

Table 9

Means, Standard Deviations, Skewness, Kurtosis, Kolmogorov-Smirnov and Shapiro-Wilks Tests

			Skewness		Kurtosis		Kolmogorav-Smirnov		Shapiro-Wilks	
	Mean	Std. Deviation	Statistic	Std. Error	Statistic	Std. Error	Statistic	Sig.	Statistic	Sig.
Race	2,02	0,22	8,561	0,132	115,35	0,263				
Gender	1,31	0,47	0,759	0,132	-1,191	0,263	0,417	<0,001	0,602	<0,001
Age	24,45	2,57	-0,317	0,132	-0,556	0,263	0,111	0,2	0,969	0,246
School	1,86	0,35	-2,05	0,132	2,216	0,263				
Part-time job (while still at school)	0,11	0,32	2,6	0,35	4,974	0,688	0,526	<0,001	0,361	<0,001
Tertiary education	1,31	0,46	0,815	0,132	-1,343	0,263	0,395	<0,001	0,62	<0,001
Employed	0,28	0,45	1,001	0,132	-1,004	0,263	0,455	<0,001	0,56	<0,001
Employed (incl. school going participants - part time)	0,29	0,45	0,937	0,132	-1,129	0,263	0,449	<0,001	0,568	<0,001
Biological Mother's Level of Education	4,81	1,37	-1,167	0,132	1,014	0,263	0,272	<0,001	0,835	<0,001
Biological Father's Level of Education	5,45	1,47	-1,174	0,132	1,199	0,264	0,246	<0,001	0,786	<0,001
Victimisation Total	8,21	2,37	3,483	0,132	14,825	0,263	0,322	<0,001	0,62	<0,001
Family Advesity Scale Total	17,66	1,7	-1,211	0,132	1,723	0,263	0,188	<0,001	0,909	0,002
Perception of Neighbourhood Total	31,22	2,93	-0,334	0,132	0,031	0,263	0,14	0,025	0,965	0,187
Beck Depression Inventory II Total	7,82	9,47	1,262	0,132	0,891	0,263	0,176	0,001	0,897	<0,001
Child and Youth Resilience Measure Total (CYRM)	120,36	19,68	-0,795	0,132	-0,047	0,263	0,084	0,2*	0,962	0,137
CYRM Individual Total	47,43	7,73	-0,77	0,132	-0,175	0,263	0,079	0,2*	0,964	0,168
CYRM Relational Total	30	5,91	-1,226	0,132	0,916	0,263	0,176	0,001	0,897	<0,001
CYRM Contextual Total	42,93	7,37	-0,895	0,132	0,111	0,263	0,097	0,2	0,958	0,096
School Engagement Scale Total	71,76	23,69	1,795	0,35	4,654	0,688	0,187	<0,001	0,824	<0,001
Satisfaction with Life Scale Total	20,99	6,66	-0,255	0,132	-0,636	0,263	0,072	0,2	0,986	0,836
Warkwick-Edinburgh Mental Well-being Scale Total	58,7	11,64	-0,763	0,132	-0,24	0,263	0,094	0,2	0,957	0,085
Parenting Scale Total	14,36	2,32	-1,581	0,132	2,392	0,263	0,159	0,005	0,871	<0,001
Parenting Warmth Total	11,2	1,71	-2,557	0,132	6,434	0,263	0,33	<0,001	0,689	<0,001
Benevolent Childhood Experiences Scale Total	10,64	1,12	2,438	0,132	7,643	0,263	0,275	<0,001	0,709	<0,001
Rugged Resilience Measure Total	44,36	6,36	-1,14	0,132	0,873	0,263	0,147	0,015	0,936	0,014
Loneliness Scale Total	15,62	5,03	0,339	0,132	-0,572	0,263	0,087	0,2	0,982	0,7
Perceived Stress Scale Total	28,46	6,21	0,105	0,132	0,128	0,263	0,078	0,2	0,98	0,626
Strengths and Difficulties Questionnaire Total	46,54	6,66	0,685	0,132	-0,347	0,263	0,123	0,077	0,959	0,103
Pandemic Questionnaire Severity Total	56,22	29,47	0,023	0,132	-1,238	0,263	0,113	0,177	0,944	0,027

**. This is a lower bound of the true significance.*

Appendix Z – Frequency Tables

Table 10

Frequencies of Identified Race

Race

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	White	2	0.6	0.6	0.6
	Black	335	97.7	97.7	98.3
	Coloured	5	1.5	1.5	99.7
	Other	1	0.3	0.3	100.0
	Total	343	100.0	100.0	

Table 11

Frequencies of Gender

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Other	1	0.3	0.3	0.3
	Female	236	68.8	68.8	69.1
	Male	106	30.9	30.9	100.0
	Total	343	100.0	100.0	

Table 12

Frequencies of Age

Age					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18	3	.9	.9	.9
	19	11	3.2	3.2	4.1
	20	11	3.2	3.2	7.3
	21	26	7.6	7.6	14.9
	22	30	8.7	8.7	23.6
	23	35	10.2	10.2	33.8
	24	46	13.4	13.4	47.2
	25	52	15.2	15.2	62.4
	26	49	14.3	14.3	76.7
	27	37	10.8	10.8	87.5
	28	30	8.7	8.7	96.2
	29	13	3.8	3.8	100.0
	Total	343	100.0	100.0	

Table 13

Frequencies of School Attendance

Do you go to school?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	49	14.3	14.3	14.3
	No	294	85.7	85.7	100.0
	Total	343	100.0	100.0	

Table 14

Frequencies of Tertiary Education

Tertiary Education					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	236	68.8	68.8	68.8
	No	107	31.2	31.2	100.0
	Total	343	100.0	100.0	

Table 15

Frequencies of Employment Status

Employment (including school going)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Unemployed	244	71.1	71.1	71.1
	Employed	99	28.9	28.9	100.0
	Total	343	100.0	100.0	

Appendix AA – Histograms

Figure 1

Histogram showing Distribution of Race

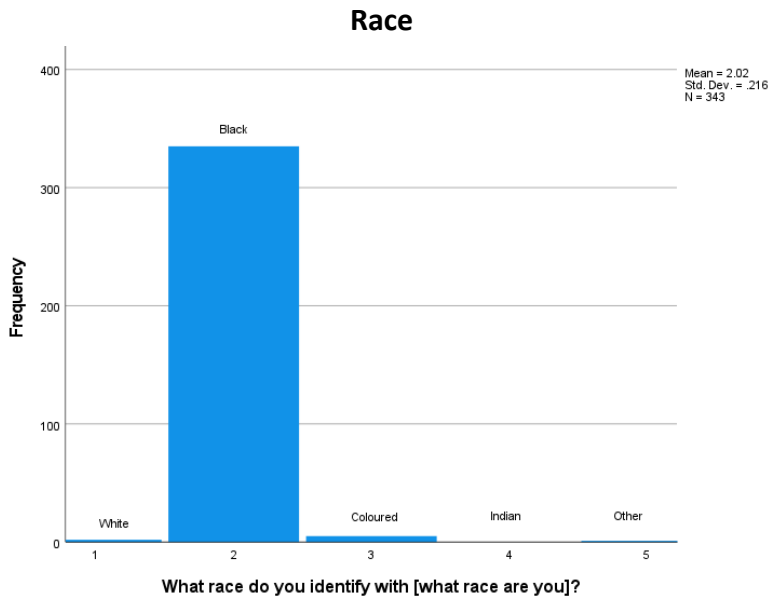


Figure 2

Histogram showing Distribution of Gender

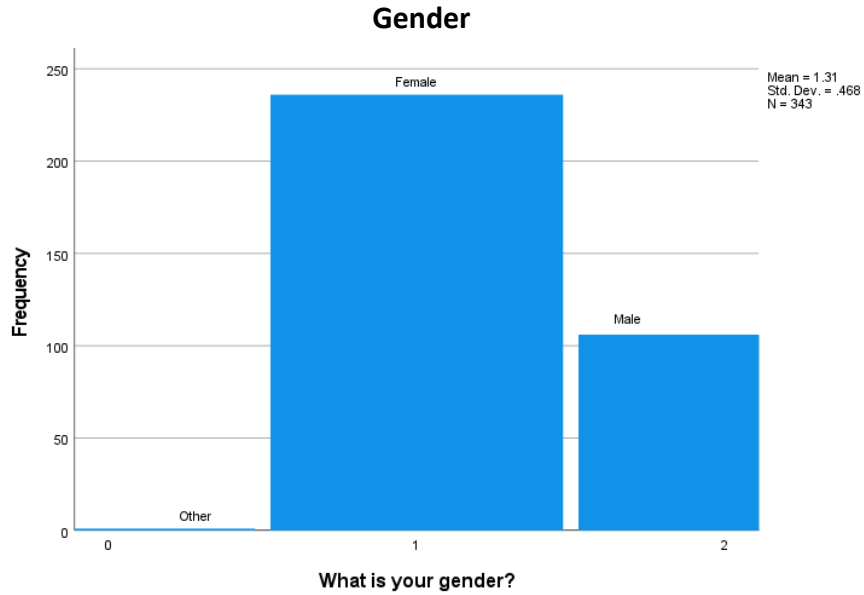


Figure 3

Histogram showing Distribution of Age

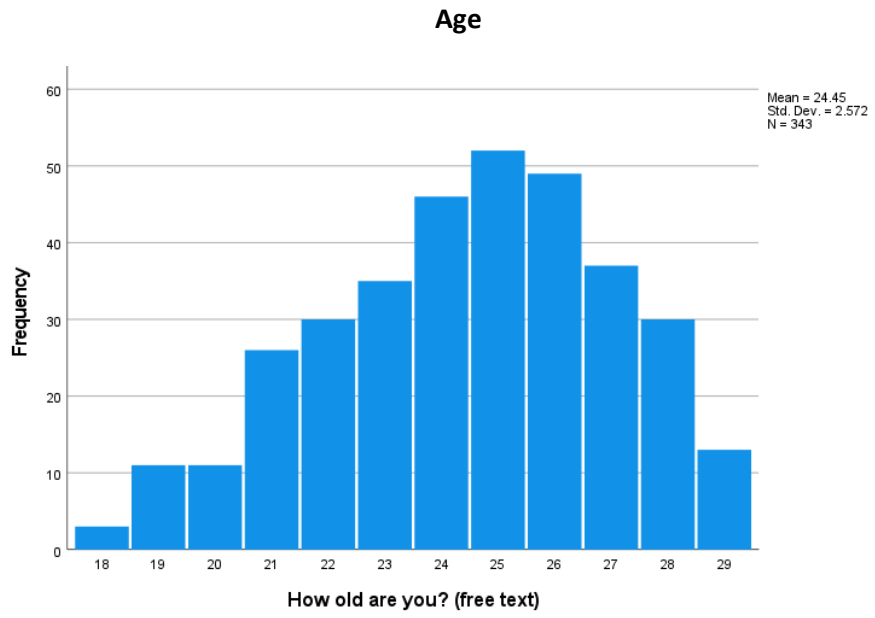


Figure 4

Histogram showing Distribution of School Attendance

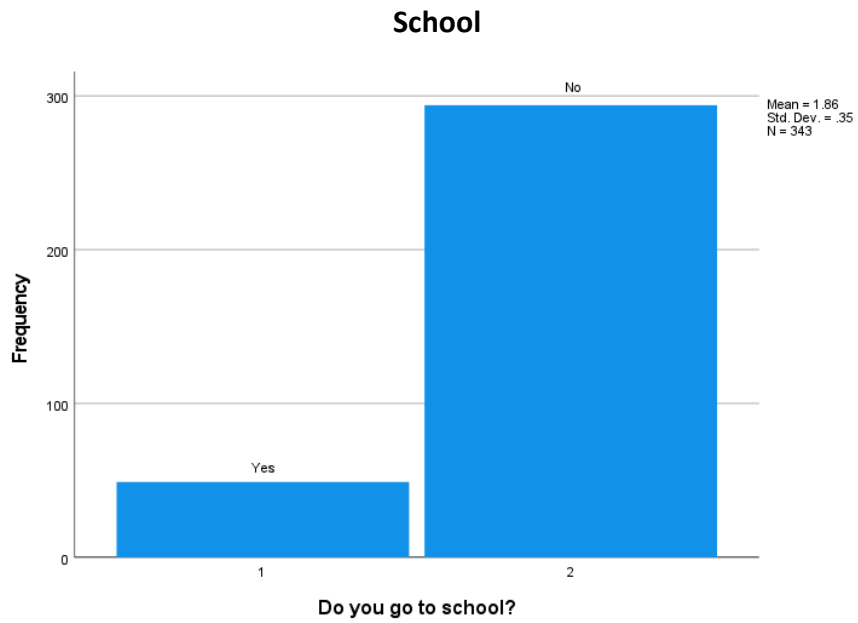


Figure 5

Histogram showing Distribution of Tertiary Education

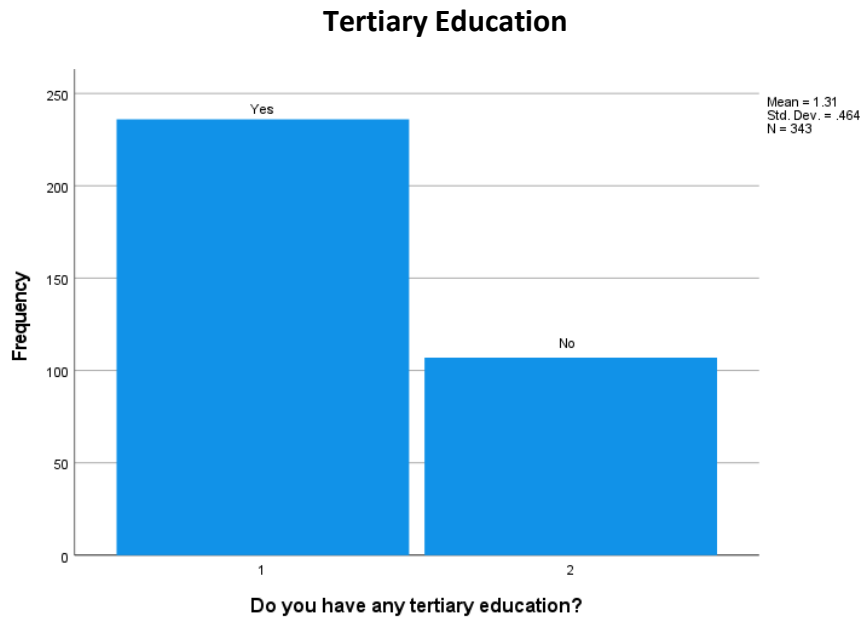


Figure 6

Histogram showing Distribution of Employment Status

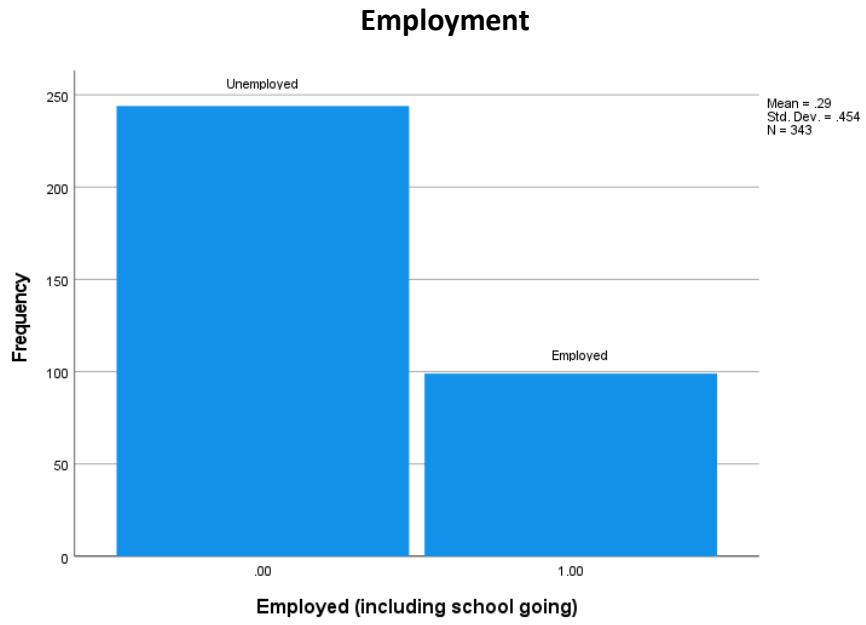


Figure 7

Histogram showing Distribution of Pandemic-Related Stress

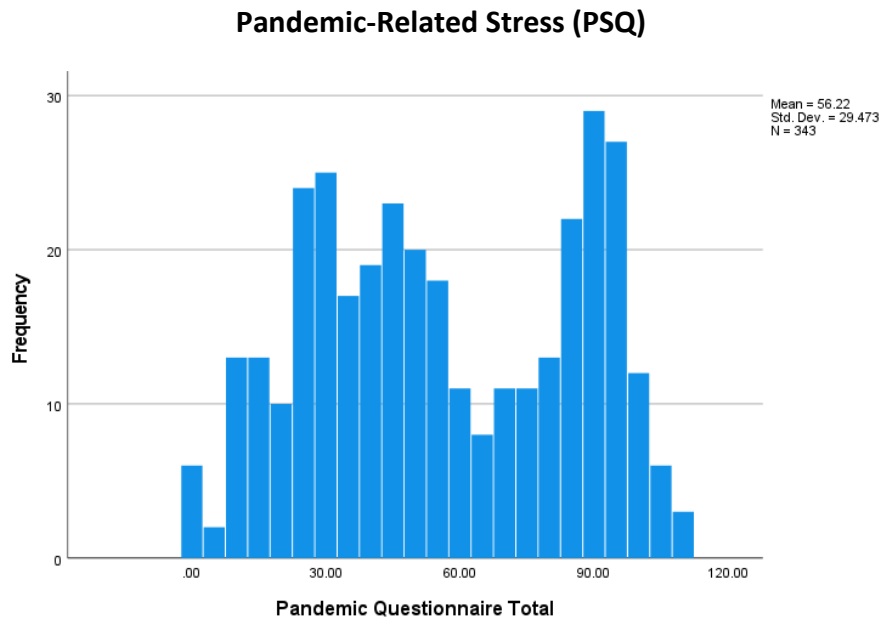


Figure 8

Histogram showing Distribution of Stress (Strengths and Difficulties - SDQ)

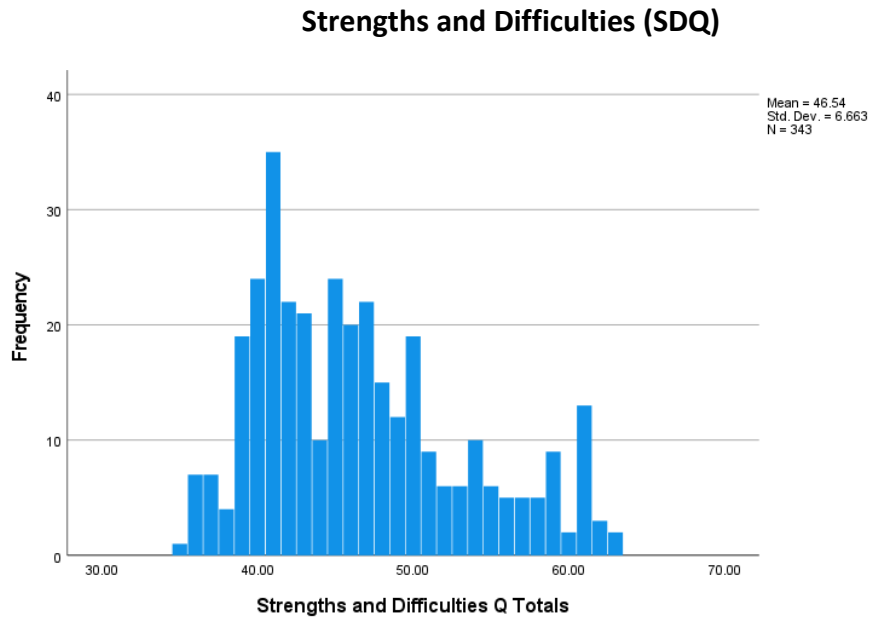


Figure 9

Histogram showing Distribution of Perceived Stress

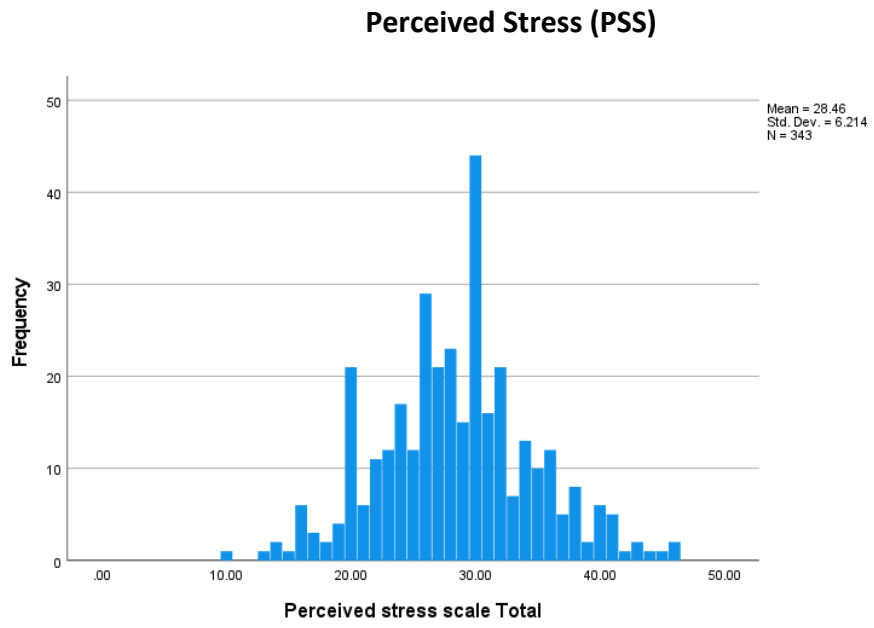


Figure 10

Histogram showing Distribution of Loneliness

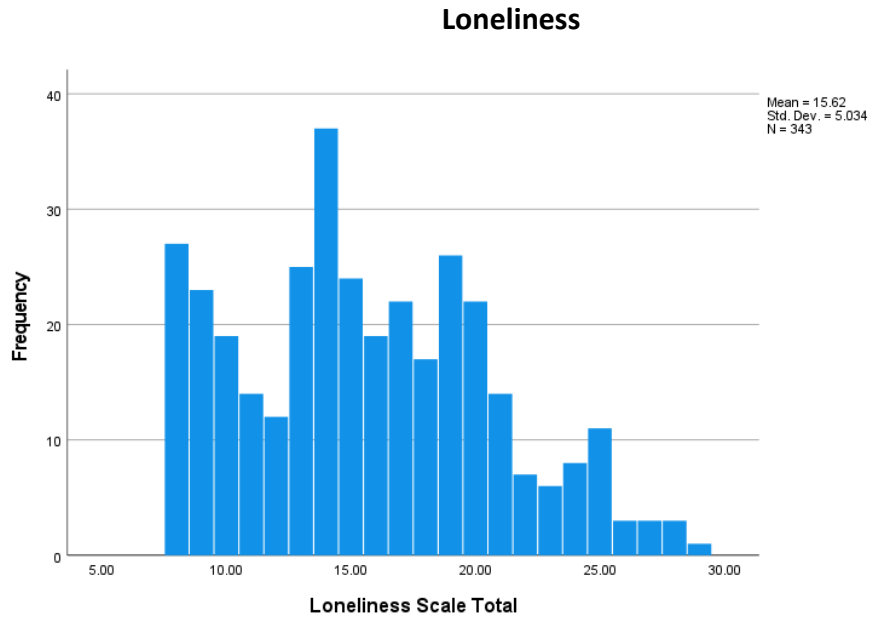


Figure 11

Histogram showing Distribution of Overall Resilience

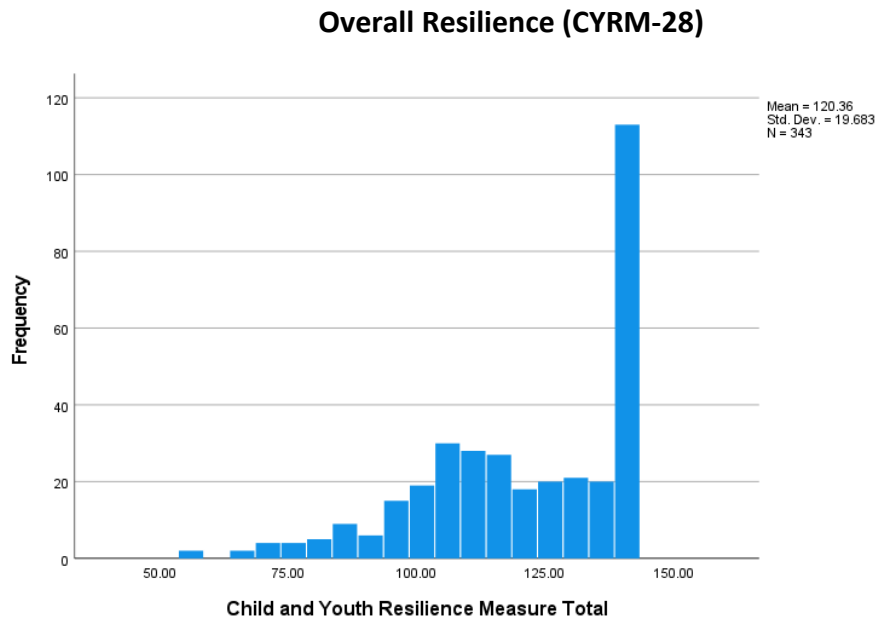


Figure 12

Histogram showing Distribution of Individual Resilience

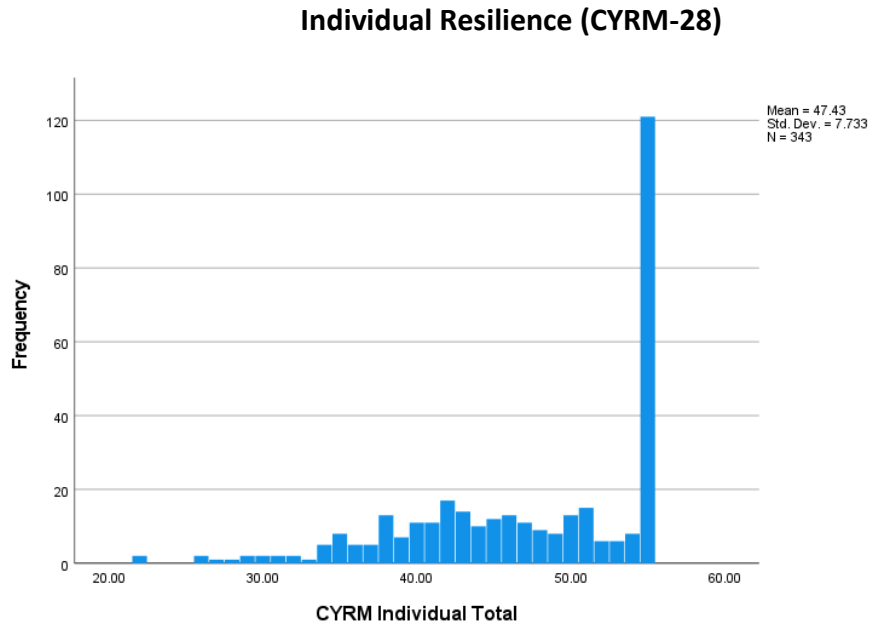


Figure 13

Histogram showing Distribution of Relational Resilience

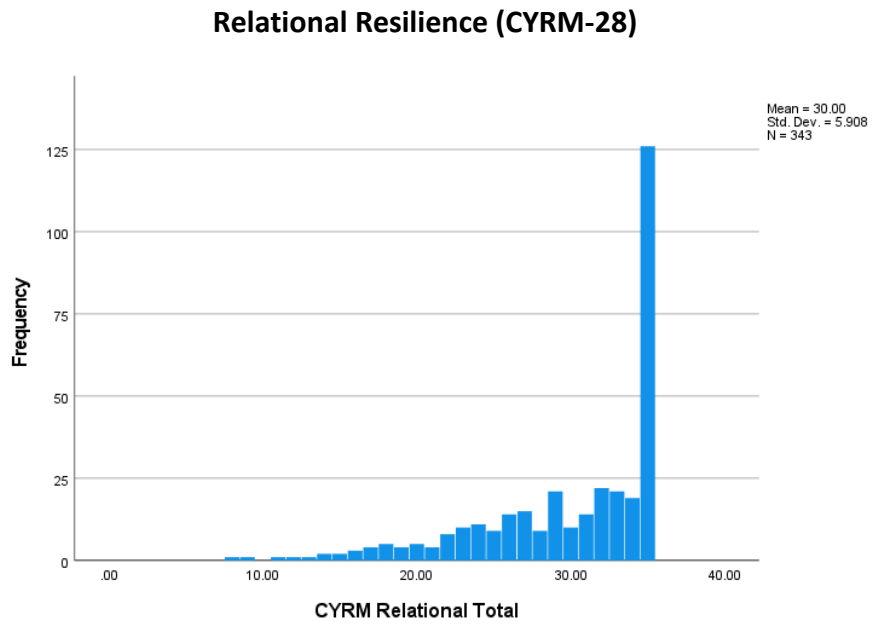


Figure 14

Histogram showing Distribution of Contextual Resilience

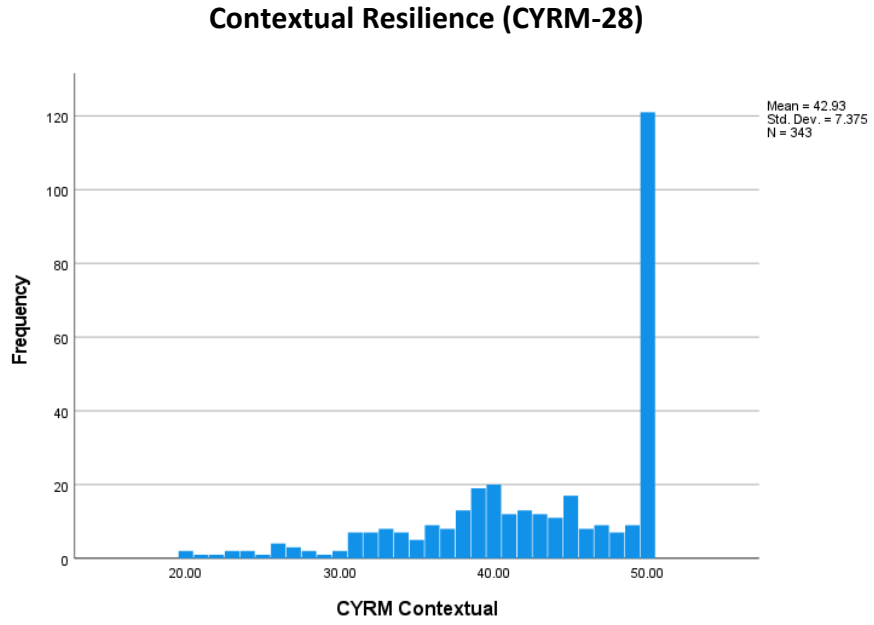


Figure 15

Histogram showing Distribution of Depression

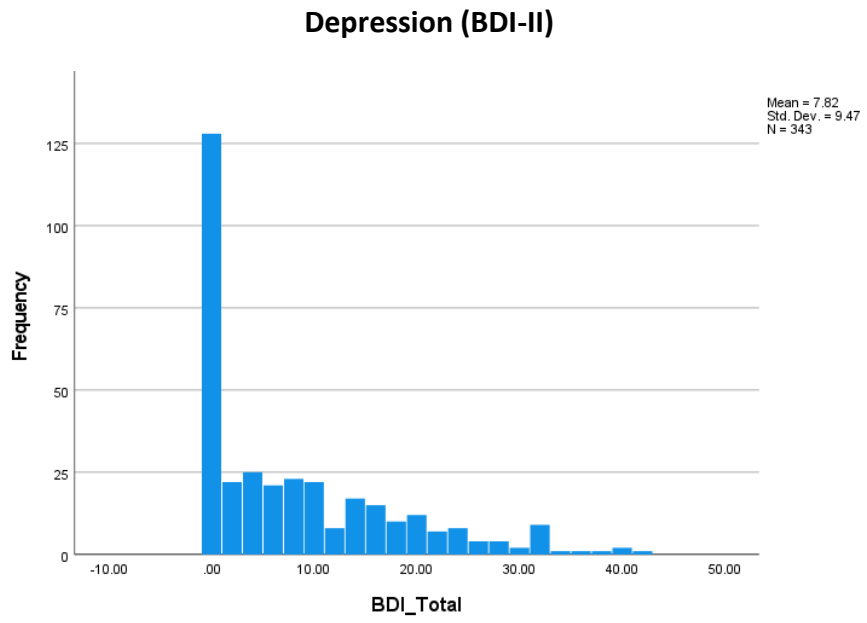


Figure 16

Histogram showing Distribution of Childhood Experience

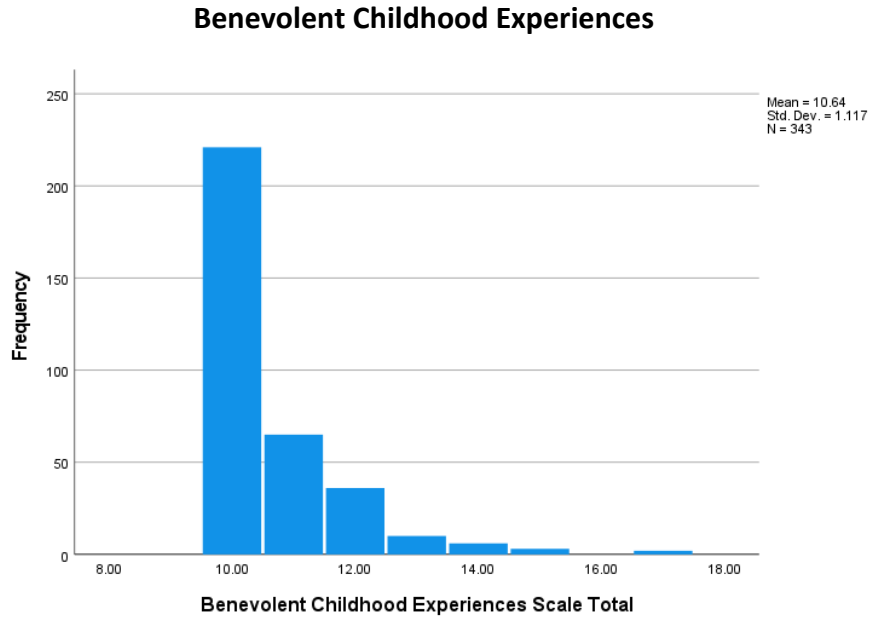


Figure 17

Histogram showing Distribution of Parental Involvement

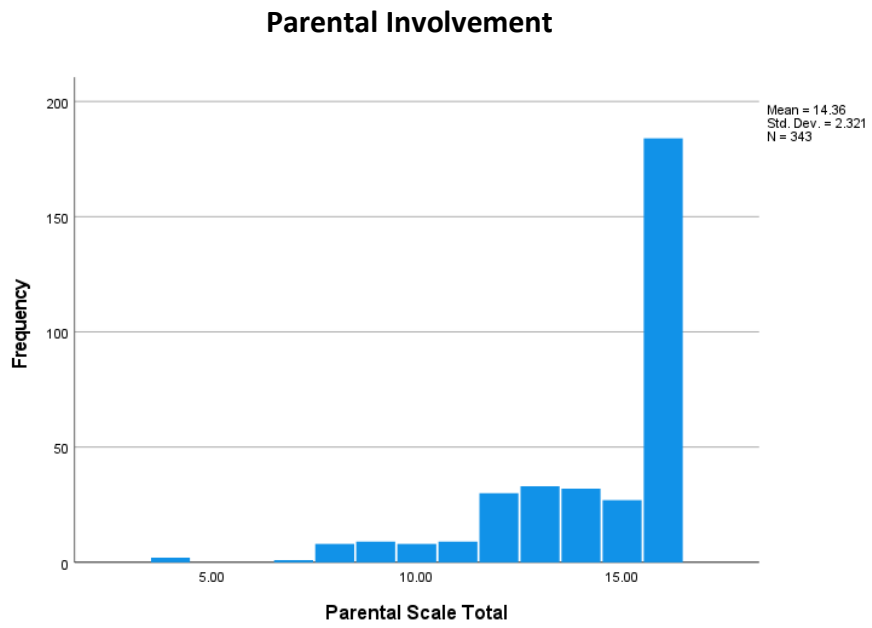


Figure 18

Histogram showing Distribution of Parenting Warmth

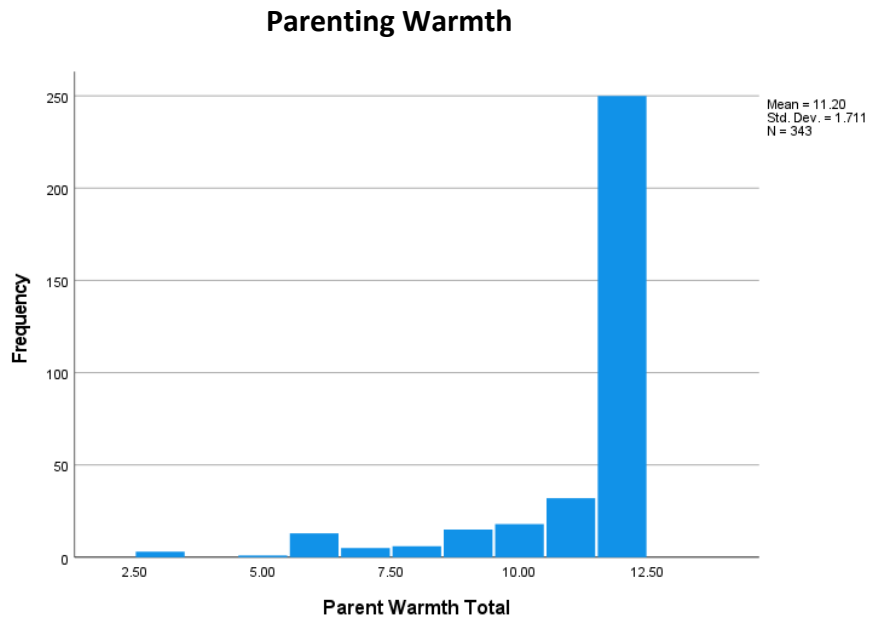


Figure 19

Histogram showing Distribution of Satisfaction with Life

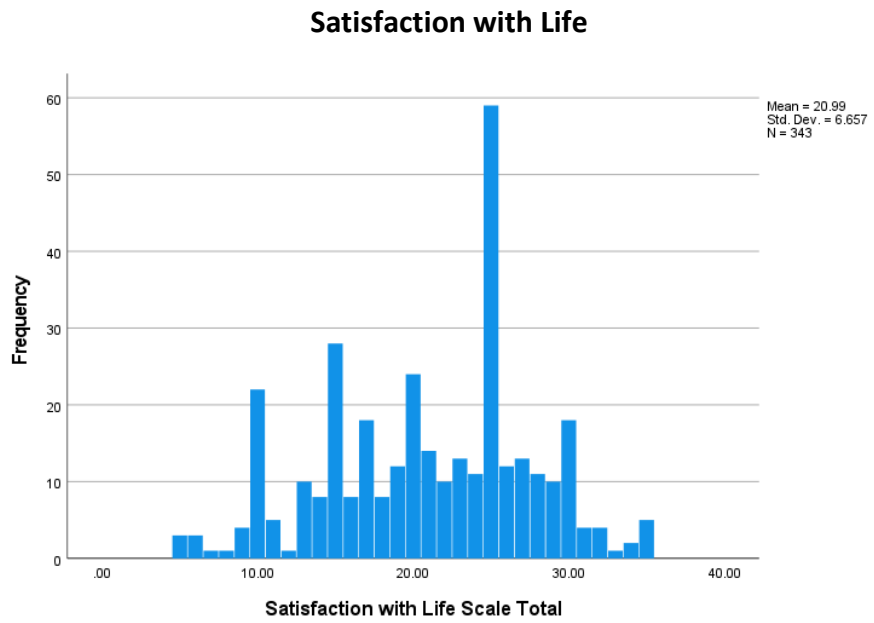


Figure 20

Histogram showing distribution of Perception of Neighbourhood

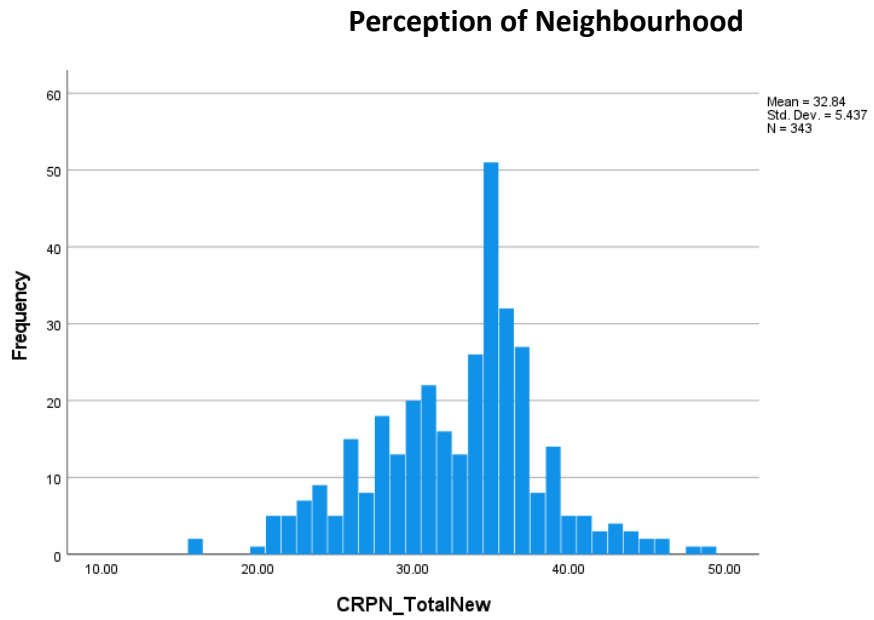


Figure 21

Histogram showing Distribution of Family Adversity

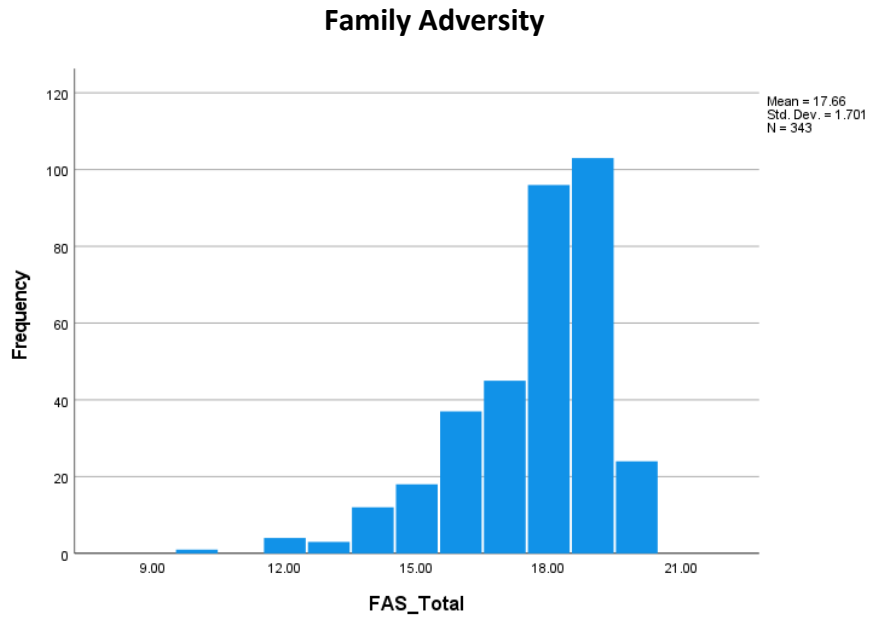
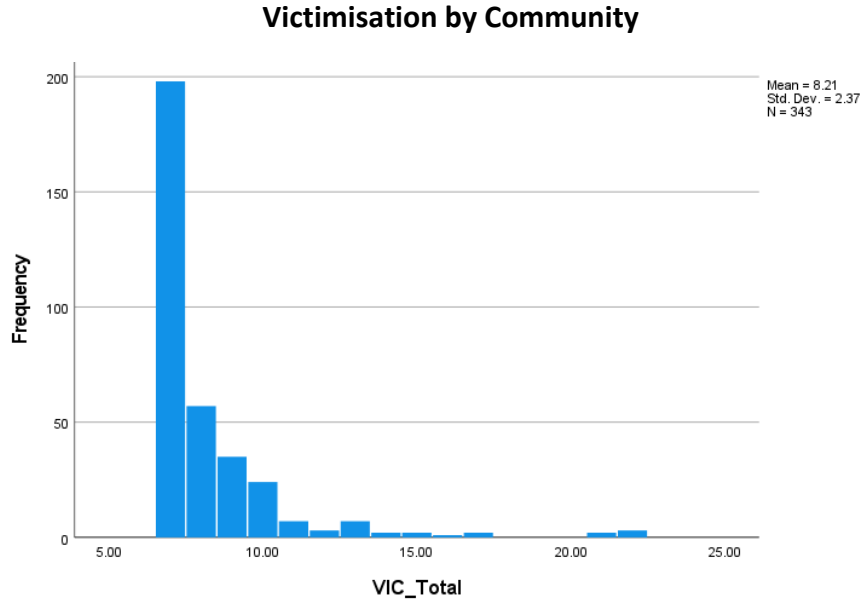


Figure 22

Histogram showing Distribution of Victimisation by Community



Appendix AB - Multiple Regression Assumption Testing (Linearity)

Figure 23

Scatterplot showing Linearity of Independent Variables against Depression (BDI-II)

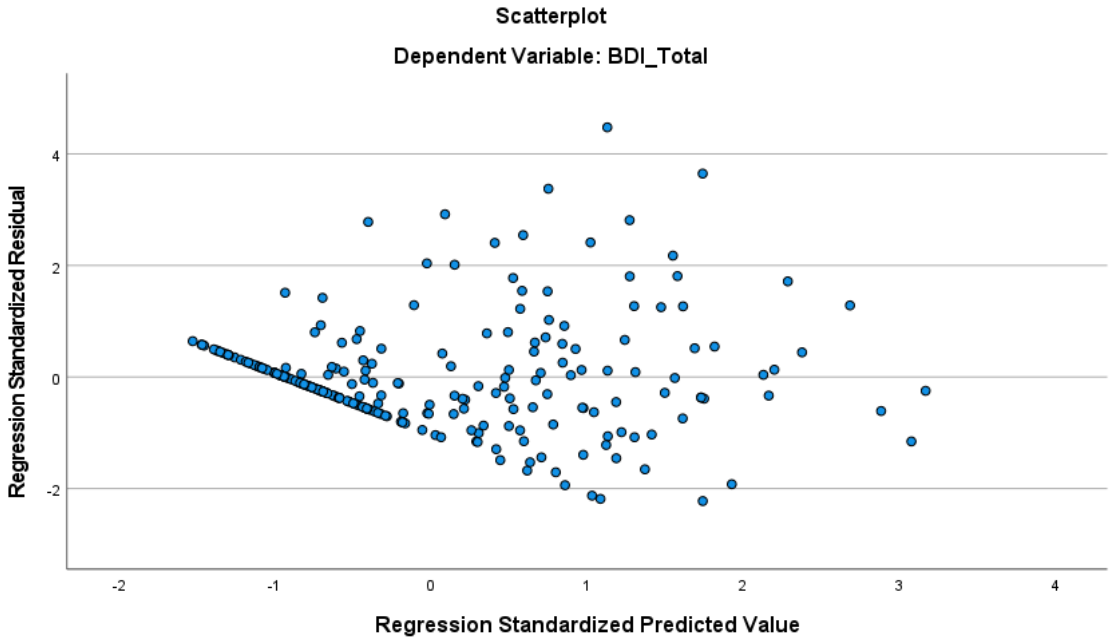


Figure 24

Scatterplot showing Linearity of Independent Variables against Overall Resilience (CYRM-28)

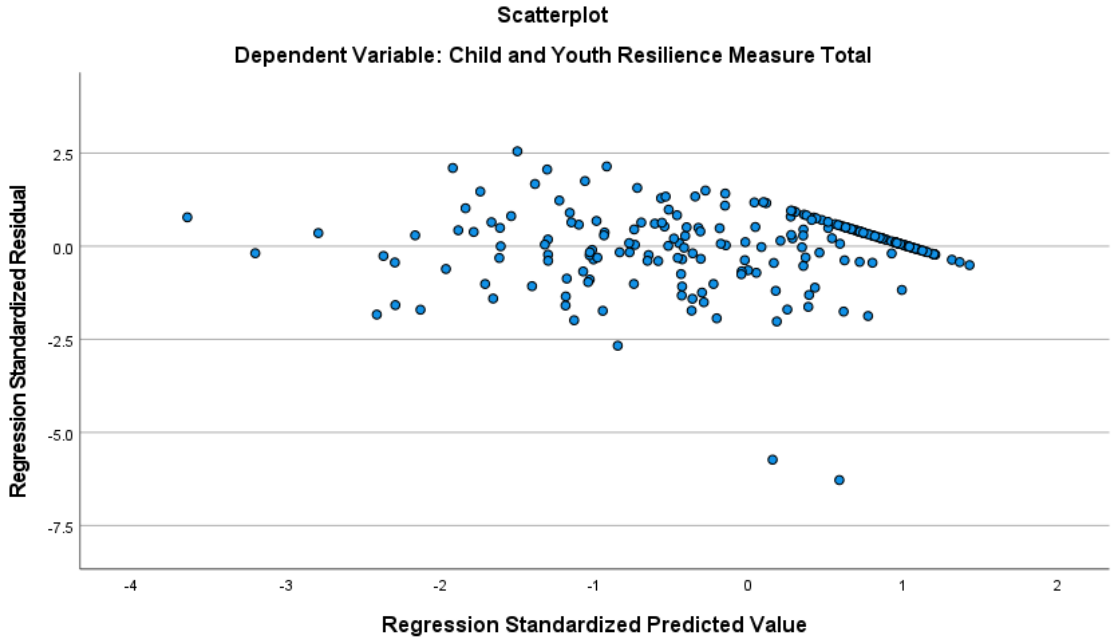


Figure 25

Scatterplot showing Linearity of Independent Variables against Individual Resilience (CYRM-28)

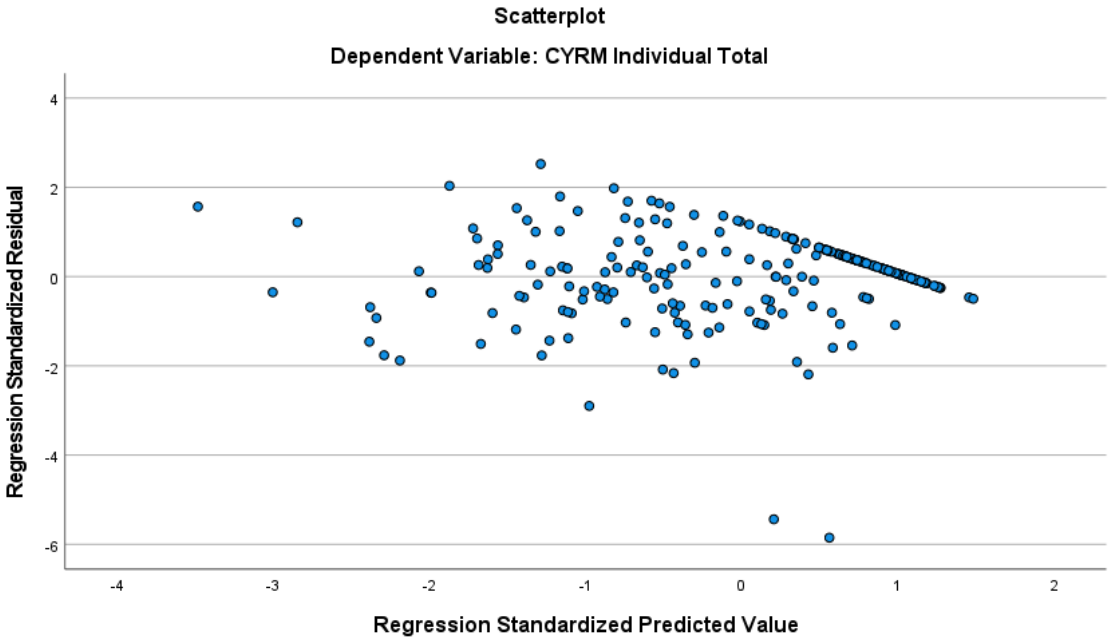


Figure 26

Scatterplot showing Linearity of Independent Variables against Relational Resilience (CYRM-28)

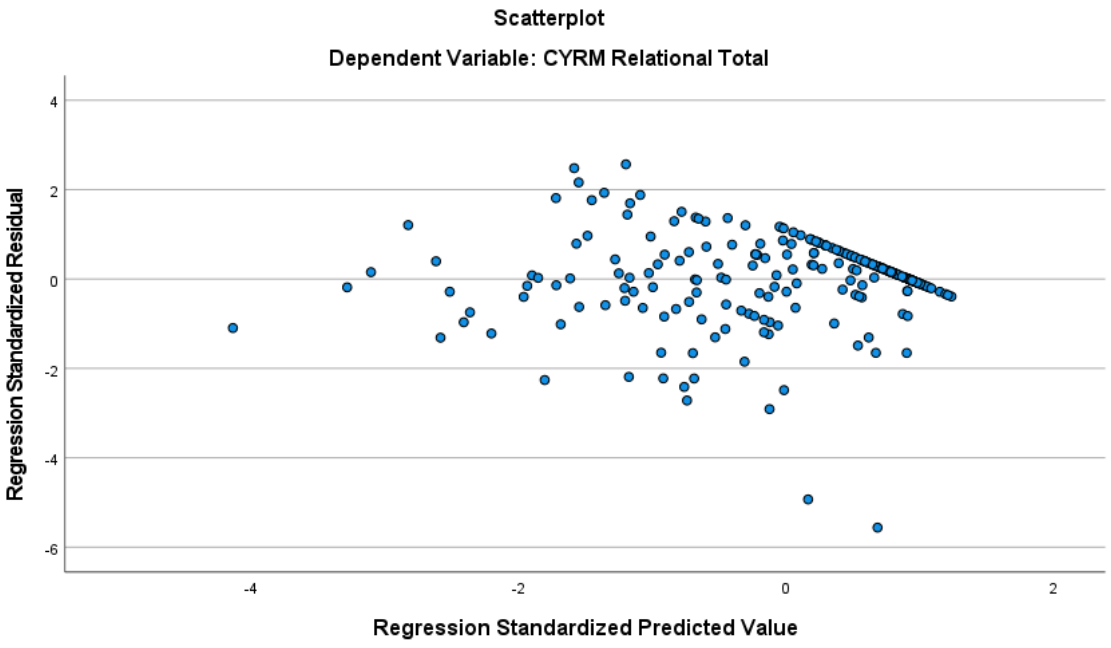
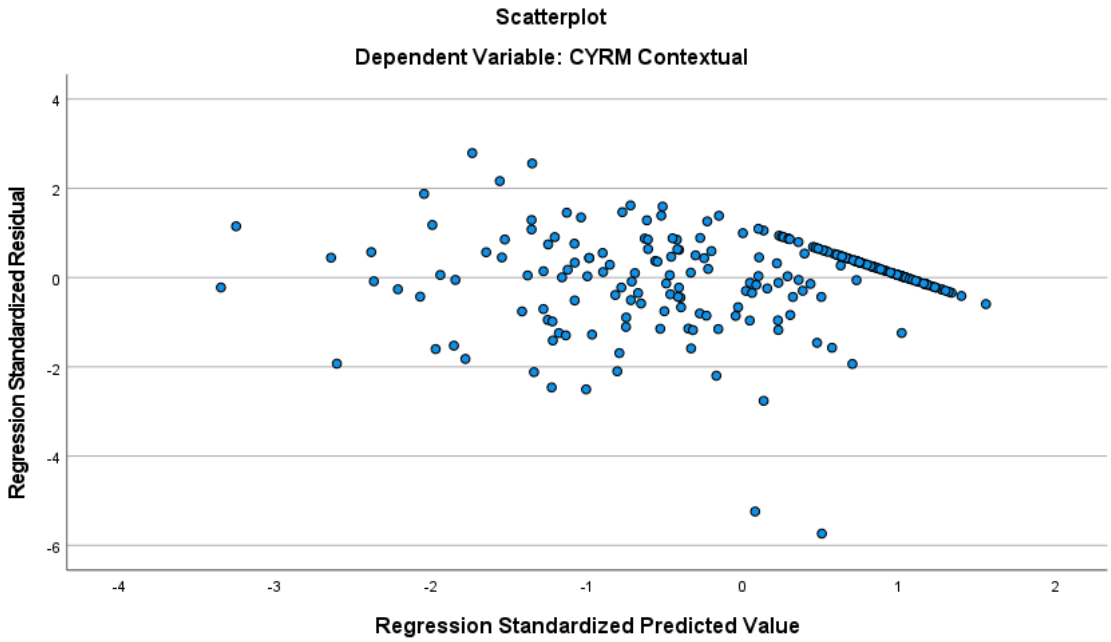


Figure 27

Scatterplot showing Linearity of Independent Variables against Contextual Resilience (CYRM-28)



Appendix AC - Multiple Regression Assumption Testing (Homoscedasticity)

Figure 28

Normal P-P Plot showing Homoscedasticity of Residuals [Depression (BDI-II)]

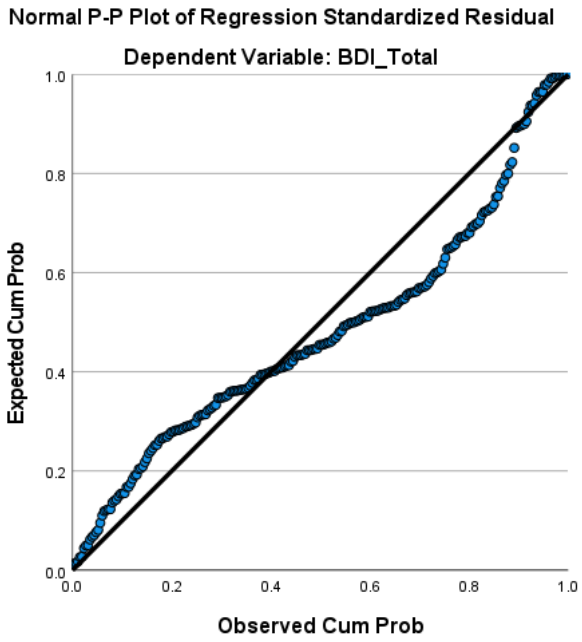


Figure 29

Normal P-P Plot showing Homoscedasticity of Residuals [Overall Resilience (CYRM-28)]

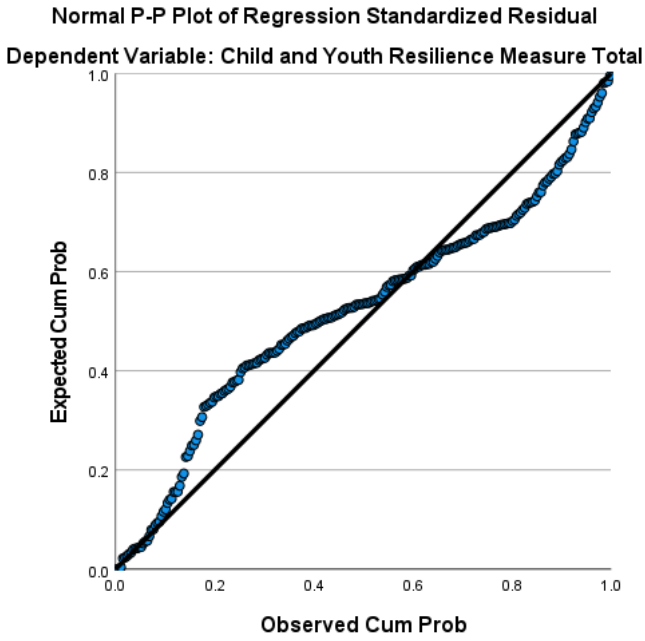


Figure 30

Normal P-P Plot showing Homoscedasticity of Residuals [Individual Resilience (CYRM-28)]

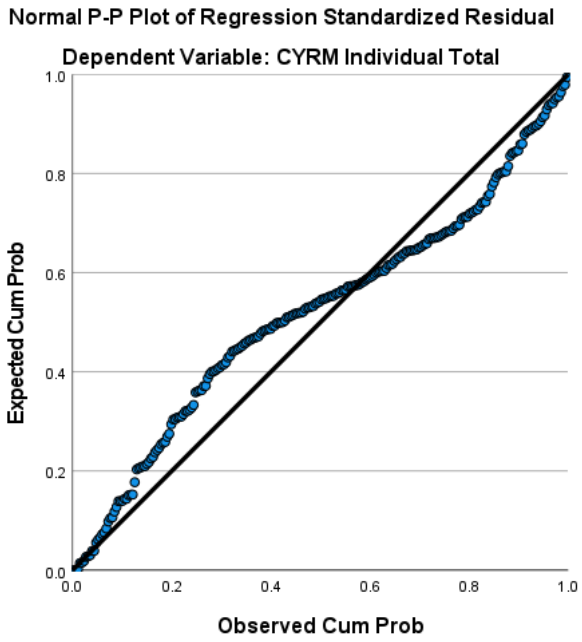


Figure 31

Normal P-P Plot showing Homoscedasticity of Residuals [Relational Resilience (CYRM-28)]

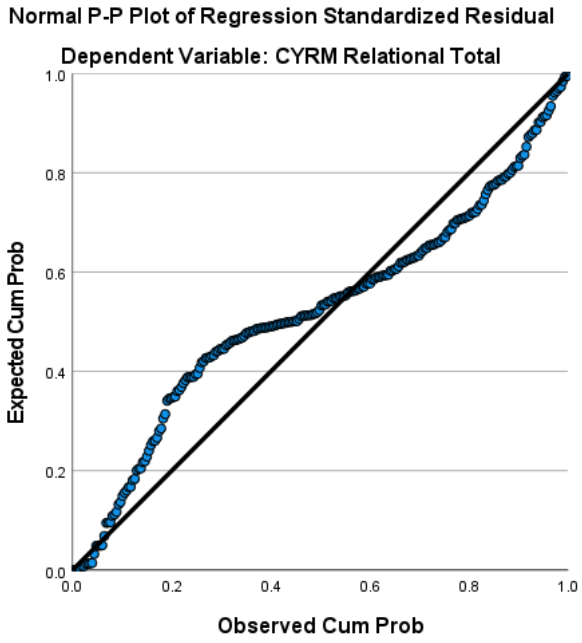
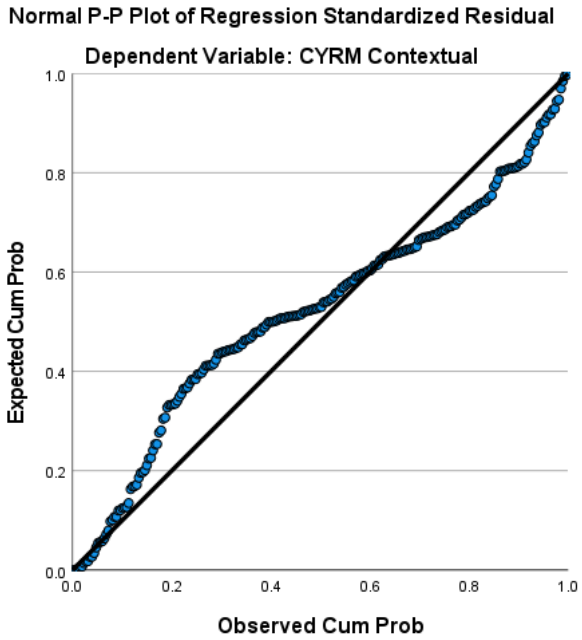


Figure 32

Normal P-P Plot showing Homoscedasticity of Residuals [Contextual Resilience (CYRM-28)]



Appendix AD - Multiple Regression Assumption Testing (Distribution)

Figure 33

Histogram showing Distribution of Residuals [Depression (BDI-II)]

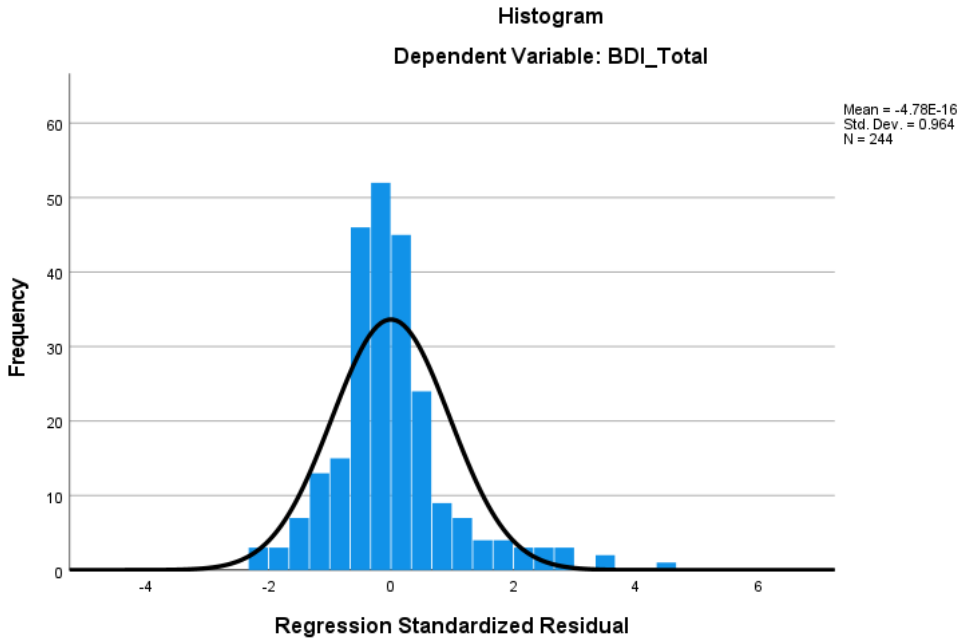


Figure 34

Histogram showing distribution of residuals [Overall Resilience (CYRM-28)]

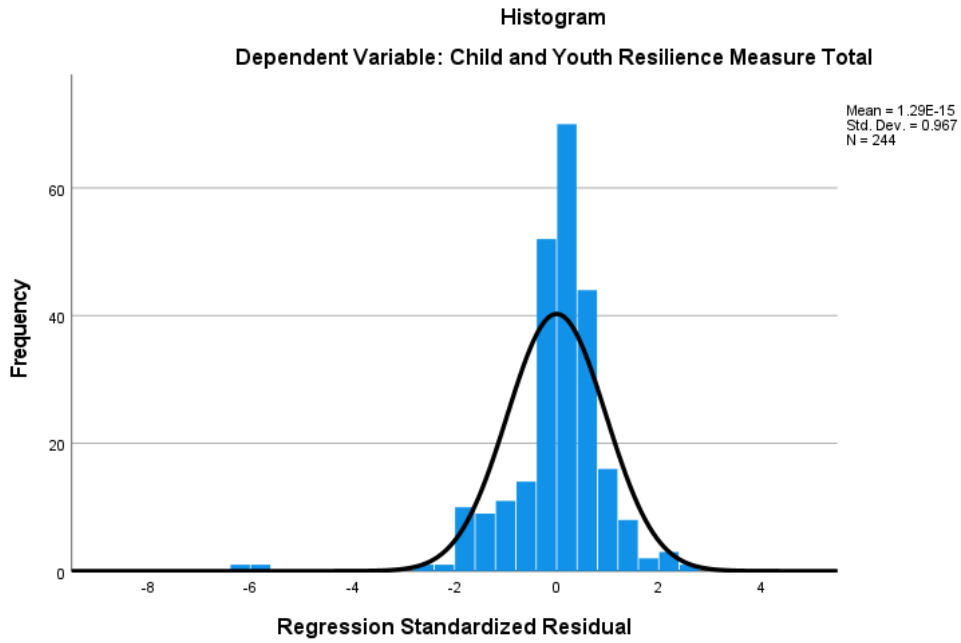


Figure 35

Histogram showing Distribution of Residuals [Individual Resilience (CYRM-28)]

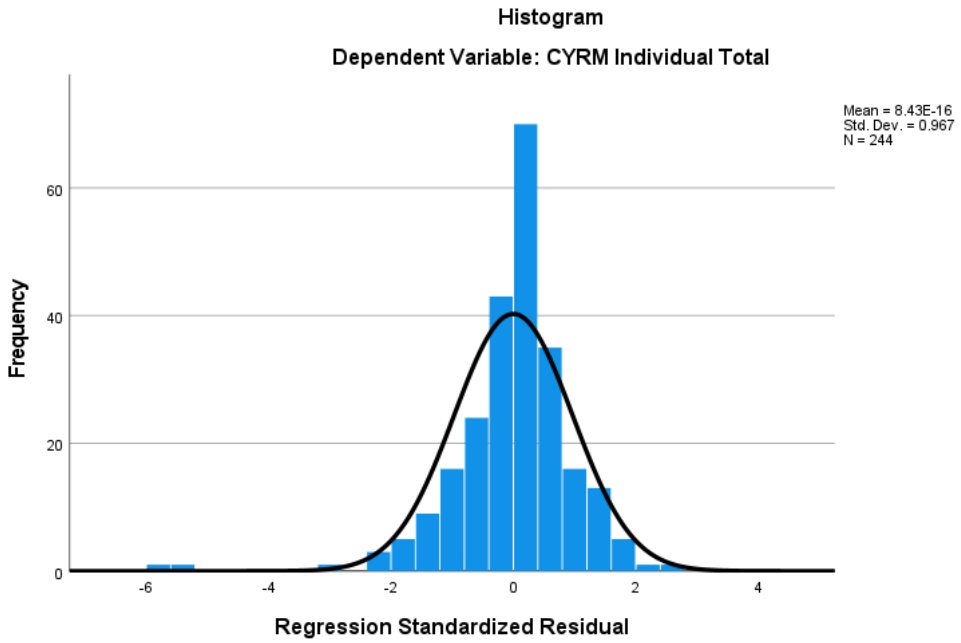


Figure 36

Histogram showing Distribution of Residuals [Relational Resilience (CYRM-28)]

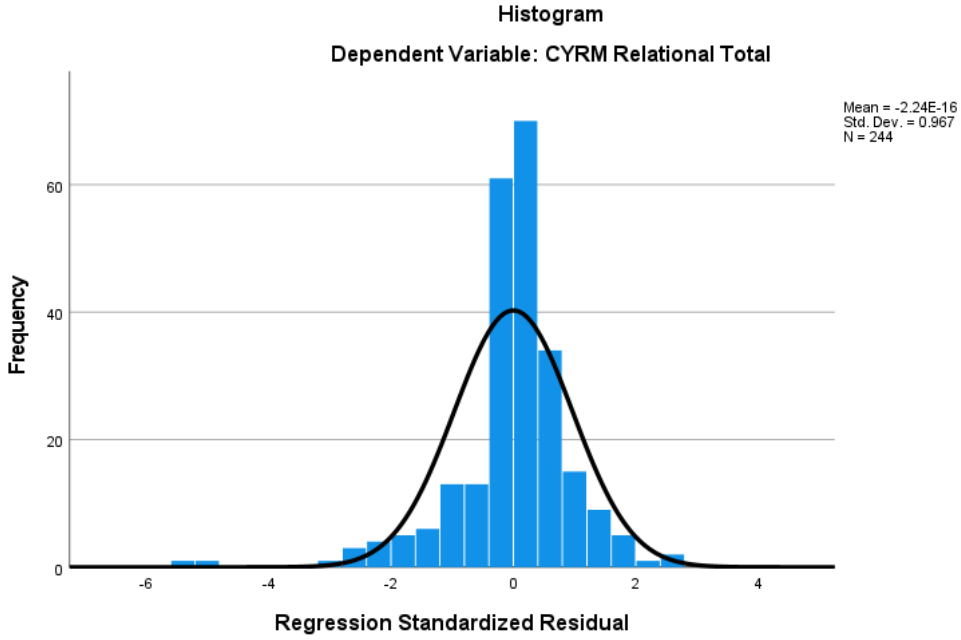
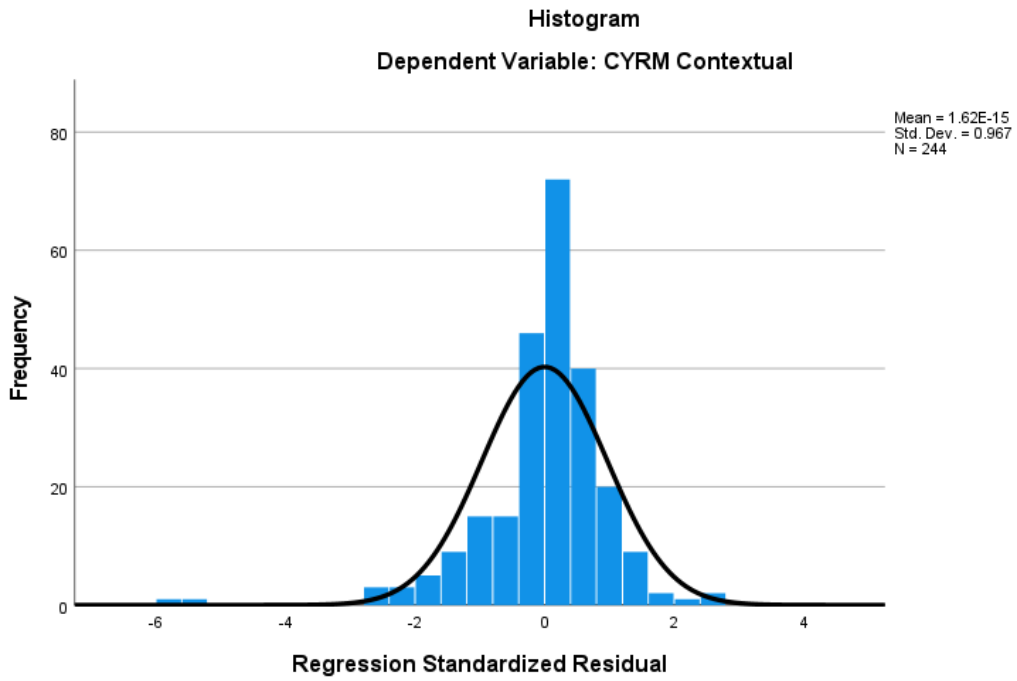


Figure 37

Histogram showing distribution of residuals [Contextual Resilience (CYRM-28)]


Histogram
Dependent Variable: CYRM Contextual
Mean = 1.62E-15
Std. Dev. = 0.967
N = 244
Frequency
80
60
40
20
0
-6
-4
-2
0
2
4
Regression Standardized Residual

Appendix AE - Multiple Regression Assumption Testing (Multicollinearity)

Table 16

Ranges of Multicollinearity Test Statistics

	Tolerance Values	VIF Statistic
Depression (BDI-II)	.407 - .894	1.119 – 2.458
Overall Resilience (CYRM-28)	.407 - .894	1.118 – 2.456
Individual Resilience (CYRM-28)	.407 - .894	1.118 – 2.456
Relational Resilience (CYRM-28)	.407 - .894	1.118 – 2.456
Contextual Resilience (CYRM-28)	.407 - .894	1.118 – 2.456

Appendix AF - Multiple Regression Assumption Testing (Outliers)

Table 17

Ranges of Outlier Test Scores

Standardised Residuals	Cook's Distance	Leverage Points	Mahalanobis' Distance	MD Sig.
-2.964 - 2.66	.000 – .395	.017 - .237	5.947 – 81.159	.000 - .989