Family Enablers of the Resilience of Youth Living in Industrialised Communities

by

Rozhé van Aswegen

Submitted in partial fulfilment of the requirements for the degree

MAGISTER EDUCATIONIS

in the Faculty of Education

at the

UNIVERSITY OF PRETORIA

SUPERVISOR
Professor L. Theron

MAY 2019

Declaration

I, Rozhé van Aswegen (Student Number 11109272), declare that the mini-dissertation titled, *Family Enablers of the Resilience of Youth Living in Industrialised Communities*, which I hereby submit for the degree, Magister Educationis in Educational Psychology at the University of Pretoria, is my own work and has not previously been submitted by me for a degree at this or any other tertiary institution.

....

Mrs. R. van Aswegen

31 May 2019

Ethical Clearance Certificate

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA
Faculty of Education

RESEARCH ETHICS COMMITTEE

CLEARANCE CERTIFICATE	**CLEARANCE NUMBER:** UP 17/05/01 Theron 17- 003
DEGREE AND PROJECT	MEd
	Family enablers of the resilience of youth living in industrialised communities
INVESTIGATOR	Ms Roché Bloemendal
DEPARTMENT	Educational Psychology
APPROVAL TO COMMENCE STUDY	31 August 2017
DATE OF CLEARANCE CERTIFICATE	29 April 2019

CHAIRPERSON OF ETHICS COMMITTEE: Prof Liesel Ebersöhn

CC

Ms Bronwynne Swarts
Prof Linda Theron

This Ethics Clearance Certificate should be read in conjunction with the Integrated Declaration Form (D08) which specifies details regarding:
- Compliance with approved research protocol,
- No significant changes,
- Informed consent/assent,
- Adverse experience or undue risk,
- Registered title, and
- Data storage requirements.

Ethics Statement

The author, whose name appears on the title page of this thesis, has obtained, for the research described in this work, the applicable research ethics approval. The author declares that she has observed the ethical standards required in terms of the University of Pretoria's *Code of Ethics for Researchers* and the *Policy Guidelines for Responsible Research*.

Dedication

I dedicate this research study to my remarkable father, Maurice Bloemendal, who has championed my own resilience.

Acknowledgements

To have achieved this milestone in my life, I would like to express my sincere gratitude to the following people:

- My Heavenly Father, who provided me the strength, knowledge, and perseverance to complete this study;
- Professor Linda Theron, research supervisor, for her invaluable advice, guidance, and inspiring motivation during difficult times during the research;
- Ms. Moira Richards, for her immaculate work, time, and patience in editing this study;
- My parents, Maurice and Ina Bloemendal, for giving me the courage to pursue my dreams, providing me with unwavering support, and for all the sacrifices they have made;
- My brother, Emielle Bloemendal, for believing in me no matter what I endeavour to do;
- My parents-in-law, Vincent and Heidi van Aswegen, for always being understanding of research commitments and continuously encouraging me;
- My grandparents, for reminding me to trust God and believe in myself.
- My best friend, Eston Lourens, for her unconditional support and motivation throughout this process.
- My wonderful support system of lecturers, mentors, and friends, for always believing in me. I can never thank you enough;
- And last, but not least, my incredible husband, Jacco van Aswegen, for your patience, sacrifices, and endless encouragement, so that I may pursue my dream. Without you this would not have been possible. Your love never fails.

Abstract

My study is a sub-study of the Resilient Youth in Stressed Environments (RYSE) Project. RYSE endeavours to better understand the resilience shown by youth who reside in communities that are affected by the petrochemical industry, and the risks associated with this industry. My study is of limited scope, and aims to explore the role of families in facilitating resilience amongst youth between the ages of 15 and 24 years who reside in the petrochemical-affected community of eMbalenhle in the Mpumalanga region of South Africa. My study made use of the social ecology of resilience theory (SERT) as proposed by Ungar (2011). Furthermore, my study followed a phenomenological research design, seeking to better understand the experiences of the 30 adolescent participants recruited for this research. Participants were selected from the community of eMbalenhle, and engaged in arts-based activities, namely, body mapping and draw-write-talk. Data generated from these activities was analysed using thematic content analysis, in which coding was used to identify key themes. The themes identified include family members work at Sasol, families provide affective support to youth, and families motivate youth to create positive futures. My study serves to provide information that is absent from current resilience literature relating to the resilience of youth affected by the petrochemical industry in South Africa, and how family (both immediate and extended) can champion resilience in this context.

Key Terms: youth, resilience, family, risk factors, petrochemical industry, petrochemical-dependant community.

Moira Richards
Freelance Editorial Services

mr@slashb.co.za

Editing Certificate

Family Enablers of the Resilience of Youth Living in Industrialised Communities

by

Roché van Aswegen

I have edited and formatted the above dissertation as follows:

Editing: Clarifying meaning, eliminating jargon, polishing language by editing for grammar, usage, spelling, punctuation and other mechanics of style.

Reference checking: Checking that in-text references are included in the list of references and that all references are punctuated according to style required.

Document formatting: Creating a consistently formatted document from an electronic manuscript according to the prescribed style file.

Note, this manuscript may not be identical to the edited version submitted to author, who has sole discretion as to which marked-up changes are accepted or not.

Moira Richards
7 May 2019

Moira Richards, writer, editor, BCompt, BA, SAFREA, Professional Editors' Guild (PEG)

List of Abbreviations

RYSE	Resilient youth in stressed environments
SERT	Social ecology of resilience theory
CAP	Community advisory panel

Table of Contents

List of Figures

List of Tables

1. CHAPTER ONE: GENERAL ORIENTATION

1.1 INTRODUCTION

I am interested in understanding the resilience of young people living in a disadvantaged community affected by the petrochemical industry. Resilience, which is defined as the capacity to adjust well to significant stress, is not a novel phenomenon (Cutter, 2016; Kichler & Kaugars, 2015; Theron, 2017; Theron & Dunn, 2010), especially in the context of disadvantaged communities (Lumbroso, Suckall, Nicholls, & White, 2017; van Rensburg, Theron, & Rothmann, 2018). However, I believe I have identified a gap in resilience research. Previous studies of resilience have not focused explicitly on how families facilitate the resilience of adolescents living in a disadvantaged area (such as a township) that is affected by the petrochemical industry. The petrochemical industry refers to the extraction or production and refining of petroleum products, which may then be transported and used in electricity, heating, transport or industrial processes (O'Rourke & Connolly, 2003). It is associated with multiple risks to human health and wellbeing. Accordingly, this chapter serves to introduce my study (which is of limited scope) on the role of the family in facilitating the resilience of the young people I have worked with in the Resilient Youth in Stressed Environments (RYSE) study (i.e., adolescents living in eMbalenhle, a community affected by the petrochemical industry).

1.2 RATIONALE

I was invited to take part in the RYSE study as a member of a larger research team based in both South Africa, at the University of Pretoria, as well as in Canada, at the Dalhousie University. In South Africa, RYSE is focussed on the resilience of young people living in the community of eMbalenhle, Secunda. It aims to explore how the resilience of young people might be facilitated by families, despite the risks associated with residing in a disadvantaged area (e.g., a township) affected by the petrochemical industry. Townships are associated with multiple risks (Pretorius & Theron, 2018), including higher rates of HIV/ Aids infections (Kalichman, et al., 2006), unemployment (Jürgens, Donaldson, Rule & Bähr, 2013), poverty (Bhana & Pattman, 2011) and illiteracy (Motseke, 2005). The petrochemical industry is associated with a number of risks, including economic (Goldenberg, Shoveller, Koehoorn, & Ostry, 2010), biophysical (Cox, Irwin, Scannell, Ungar, & Bennett,

2017), health (Kazi, Kazi, Filip, & Radulovic, 2012), and psychosocial risks (Ong, Zautra, & Reid, 2010). According to the RYSE team (RYSE, n.d.), there are no previous studies focussing explicitly on how or why young people adjust well to the aforementioned risks.

My study forms only one part of three that will seek to better understand the resilience of young people in eMbalenhle across multiple levels, including the individual, the family, and the community. The focus of my study is on how families enable the resilience of young people who grew up in a community, like eMbalenhle, which is affected by the petrochemical industry. Family has, in recent years, become an important aspect of resilience research (Masten, 2018). Family supports adolescent resilience in the face of many risks. For example, in a study by Chew, Carpenter, and Haase (2018), 15 young people between the ages of 13 and 16 years who had been diagnosed with epilepsy, were interviewed and it was found that, despite the challenges of illness, families showed resilience by effectively managing stress. In another study, family's belief systems and values enabled adolescents who reside in impoverished contexts to be resilient (Bhana & Bachoo, 2011). A third study found that parenting style might influence the actions and emotional behaviour of adolescents living in rural areas (Davids, Roman, & Leach, 2015).

Countless more studies have been conducted, documenting the role of the family in enabling resilience (e.g., Burnette, 2018; Chang & Yarnal, 2018; Evans, 2005; Jonker & Greeff, 2009; Lou, Taylor, & Di Folco, 2018; McKenzie & Chataika, 2018; Sonuga-Barke, 2019; Theron, Theron, & Malindi, 2013), and it is for this reason that I have elected to focus on the family's role in supporting resilience in my own research. Considering all these findings about how families affect the resilience of adolescents, it is fundamental to consider the role of the family in championing adolescent resilience in an area affected by the petrochemical industry. This is one area in which resilience has not been researched—despite the serious risks. This has encouraged me to pay specific attention to the role of family, not only in my research, but in my studies as well.

1.3   PROBLEM STATEMENT

Literature has proven that families are capable of facilitating the resilience of youth affected by risk (Distelberg et al., 2018; Henry, Sheffield Morris, & Harrist, 2015; Masten & Monn, 2015; Pangborn, 2019). However, to date resilience studies have failed to document the role of the family in supporting the resilience of youth in disadvantaged South African communities affected by the petrochemical industry. This industry is associated with multiple risks (Chan, Shie, Chang, & Tsai, 2006; Lin, Li, & Mao, 2004; Mativenga & Marnewick, 2018; Rohani, Keramati, & Razmi, 2017) that negatively impact the youth, as well as their families, residing in these areas. Educational psychologists have a responsibility to support children and adolescents to adjust well to risk-filled environments (Demaray & Malecki, 2002; Blake, 2016; Morris & Atkinson, 2018; Greig, MacKay & Ginter, 2019). In order to enable the resilience of these youths, it is therefore necessary for us, as educational psychologists, to consider what is known from international studies and local studies regarding how families champion resilience, and note what similarities and differences may exist when young people live in a community that is affected by the petrochemical industry. Nonetheless, educational psychologists cannot assume that the findings from existing studies will explain how families enable youth resilience in the face of petrochemical risks because resilience is a process that is sensitive to varying contexts (Ungar, 2008). Because resilience is changeable, it is possible that families will enable resilience in different ways when they are situated in a community affected by the petrochemical industry, compared to other contexts, such as violent communities (Scorgie et al., 2017), or immigrant communities (Vesely, Letiecq, & Goodman, 2017), or other contexts of risk.

1.4   PURPOSE OF STUDY

The purpose of this phenomenological study is to explore how the resilience of young people (aged 15 to 24 years) living in eMbalenhle (a community challenged by risks associated with the petrochemical industry) is facilitated by families.

1.5   RESEARCH QUESTIONS

My study, which is of limited scope, is directed by a single, primary research question: "How do families facilitate the resilience of young people residing in a community challenged by risks associated with the petrochemical industry?"

1.6   THEORETICAL FRAMEWORK

My study will follow the principles of social ecology of resilience theory (SERT), which views people and their resilience in terms of their interactions with their environment (Ungar, 2011). Resilience is directly affected by an individual's environment (Ungar, 2008) and thus must be viewed systemically. While an individual is expected to make use of resilience-supporting resources, or seek resources required to sustain functionality, the environment is expected to provide whichever resources are deemed necessary to enable resilience (Theron, 2016b).

Bronfenbrenner's ecological systems theory, which underpins SERT (Ungar, 2011), divides an individual's environment into five levels. The first is the microsystem. The microsystem refers to an individual's immediate surroundings, including family and neighbours (MacBlain, 2018). The second level is the mesosystem. The mesosystem refers to the interactions or relationships between structures found within the microsystem, such as connections between the home and school (Curtin, Massey, & Keefe, 2017). The exosystem is the third level, and refers to the social environment and includes the parent's workplace and available resources within the community (Lee & Kang, 2017). The fourth level is the macrosystem, which refers to the sociocultural surroundings an individual is exposed to such as cultural values and laws (Ramos, 2017). The final level, the chronosystem, refers to the notion of time—referring to possible changes that may occur over a lifetime, such as the structure of a family or political developments (Danhoundo & Khanlou, 2017). All these levels play a role in resilience (Ungar, Ghazinour, & Richter, 2013).

In order to better understand SERT, and how resilience is an interaction between the individual and the environment, it is necessary to understand the four principles at the heart of it, namely, decentrality, complexity, atypicality, and cultural relativity (Ungar, 2011).

Decentrality holds that resilience cannot be viewed as a trait stemming from the individual (Ungar, 2011) but should, rather, be seen as resulting from the processes between the individual and her or his environment, in what may be explained as the person–context exchange. In other words, the individual and her or his strengths are not central to resilience. Ungar (2015) found that individuals were able to do better in the face of adversity when provided with social ecological resources. For

example, in a study by Brook, Brook, de la Rosa, Whiteman, and Montoya (1999), 2,837 adolescents aged between 12 and 17 years were interviewed in their homes in Colombia to identify possible protective factors in an environment plagued by violence and drug use. Despite these risks, a positive parent–child relationship was found to serve as a protective factor against the use of drugs and delinquent behaviour.

Complexity refers to the notion that resilience involves a number of complex processes and resources that vary at specific points in time, across cultures, and within contexts, resulting in change over time (Ungar, 2011). It is thus apparent that what enables resilience in one context may not enable resilience in another context or at another time. In a study by Ngai, Cheung, To, Liu, and Song (2013), done in Hong Kong, it was found that parental supervision did not have a vast effect on the resilience of adolescents. However, youth residing in the United States showed a greater degree of resilience when experiencing supervision from their mothers (Buckner, Mezzacappa, & Beardslee, 2003). From these examples, it is apparent that, despite measuring the same factor (parental supervision), contextual differences considerably affect the resilience of the youth involved in the studies.

Atypicality can be explained as the somewhat uncommon methods of coping that some individuals or communities employ in dealing with adversity (Ungar, 2011). These methods may appear to be maladaptive when compared to mainstream ideas; however, they should be viewed within the context in which they exist (Bottrell, 2009). For example, Bottrell (2009) conducted a study in which she examined the resilience of a group of adolescent Australian girls, and found that their resilience was supported by a local gang that the girls had been involved in, while attending school hampered their resilience due to discrimination taking place at the school. Although gangs are seen as a negative entity, this one was found to assist girls in the study to remain resilient.

The concept of cultural relativity requires us to view adaptive functioning within its specific context and culture (Ungar, 2011). Resources required for resilience are greatly affected by religious beliefs, family traditions, and other culturally informed aspects of a specific context (Theron, 2016b). For example, Panter-Brick & Eggerman (2012) found that in Afghan families exposed to risks such as poverty,

cultural values were deemed highly important for resilience because these values determined how hardships and future hopes were perceived.

1.7 CONCEPT CLARIFICATION

1.7.1 Risk

Risk can be defined as a measure of the prospect and degree of difficulty resulting from adversity (Haimes, 2009). For the purposes of my study of limited scope, risk refers to the petrochemical industry, which places youth who grow up in communities affected by the industry at risk for a number of reasons including psychosocial risks and ecological risks (Cox et al., 2017). The petrochemical industry refers to the extraction or production and refining of petroleum products, which may then be transported and used in electricity, heating, transport or industrial processes (O'Rourke & Connolly, 2003). The risks associated with the petrochemical industry are detailed in Chapter Two.

1.7.2 Resilience

Resilience can be defined as positive adaptation to adversity, stress, or the impact of trauma (Masten, 2018). It is seen as the effective use of resources at an individual, family, or cultural level in order to achieve healthy functioning and to adapt well to risks (Panter-Brick, et al., 2018).

1.7.3 Resilience Enablers and the Family

Resilience is enabled by different resources such as individual factors (van Breda, 2017b), family support (Theron, 2017a), or community assistance (Runswick-Cole, Goodley, & Lawthom, 2018). In my research, I attempt to understand which family factors result in youth positively adapting to their adverse petrochemical context.

Given the continual fluidity of society, defining family can be challenging. According to the *White Paper on Families in South Africa*, the concept of family is defined as "a societal group that is related by blood (kinship), adoption, foster care or the ties of marriage (civil, customary or religious), civil union or cohabitation, and go beyond a particular physical residence" (Department of Social Development, 2012, p. 3). Put differently, families include nonmarital cohabitation, childless families, reconstituted families (in which parents have children from previous relationships,

and then combine to construct a new family), and skipped-generation families—in which grandparents raise grandchildren—(Raniga and Mthembu, 2017). These variations in the structures of South African families are different from the more nuclear or traditional family structures reported in Western studies, thus demanding consideration of a large diversity of family structures (Rabe, 2008). For the purposes of my study, I consider family to refer not only to the nuclear family, but also to family in all its varied forms, as outlined by the *White Paper on Families in South Africa*.

1.7.4   Young People/Adolescents

Adolescence may be viewed as the period of time that falls between childhood and adulthood, and includes biological development and maturing as well as adjustments in social roles (Crone, Peters, & Steinbeis, 2017). This transition period is said to fall between the ages of 10 and 24 years (Sawyer, Azzopardi, Wickremarathne, & Patton, 2018). For the purposes of my study, adolescents between the ages of 15 and 24 years will be included. This age range relates to the specifications of the RYSE study. Further, it is important to focus on this age range because the period of adolescence is considered critical in development, making youth more susceptible to drug use (Brook, Morojele, Pahl & Brook, 2006), sexual violence (Petersen,Bhana & McKay, 2005) and suicidal ideations (Wild, Flisher & Lombard, 2004).

1.8   ASSUMPTIONS

It is my assumption that the resilience of young people will be championed by their families in the form of financial maintenance, such as the providing of housing, education and food, and positive emotional support in form of love. I base this assumption on past research that has found that financial maintenance and the provision of basic necessities has enabled the resilience of youth (Goel, Amatya, Jones, & Ollendick, 2014; Walsh, 2015), as well as research that has found that emotional support is necessary to champion resilience (Bhana et al., 2016; Bireda & Pillay, 2018).

1.9   METHODOLOGY

My methodological approach is detailed in Chapter Three. What follows below is a summary of the methodology applied for this study.

1.9.1 Epistemological Paradigm

In my study, I have elected to use an interpretivist paradigm. This paradigm holds that reality is socially constructed through interactions with, and experiences in, one's context and that reality—and knowledge of this reality—is thus subjective (Ye, Ollingtong, & De Salas, 2016). The reasons for using this paradigm stem from a need to better understand participants' resilience in their disadvantaged contexts, and from their perspective. The paradigm also complements the qualitative phenomenological design of this project.

The advantage of using an interpretivist paradigm is that it will assist me in better understanding the resilience of young people through the use of arts-based activities and interviews, rather than questionnaires—giving participants the opportunity to share their insights, and allowing me to ask in-depth questions and probe for a better understanding (Basias & Pollalis, 2018). A disadvantage, however, is that the interpretivist paradigm leaves little room for the generalisation of findings because responses are context specific, and these symbolic realities cannot be applied to multiple contexts (Wijesinghe, 2012). The interpretivist paradigm will be detailed further in Chapter Three (Section 3.4.1).

1.9.2 Research Design

In my study, I have elected to use a phenomenological design, which focuses on how individuals perceive and understand a specific phenomenon (Vagle, 2018). In my study, the phenomenon of interest is the petrochemical industry. The advantages and disadvantages of this research design will be discussed in detail in Chapter Three (Section 3.5.1).

1.9.3 Sampling

Participants for this project were recruited via flyers (see Addendum A) by a preselected community advisory panel that collaborated with the RYSE project. I was, therefore, not involved in the selection of participants (which was purposeful). The participants, and advantages and disadvantages, for this form of sampling are discussed in Chapter Three (Section 3.5.2). In total, 30 participants (aged 15–24 years) constituted the sample for my qualitative study of limited scope.

1.9.4   Data Generation

Data generation was done in groups, by dividing participants equally amongst the four student researchers. This was done in one day, starting in the morning and continuing until the afternoon. In the larger RYSE study, arts-based methods such as body mapping, body theatre, drawing, and clay modelling were used. However, for the purposes of my study, I will only report the methods that provided answers to my research question, namely, body mapping (Lys, Gesink, Strike, & Larkin, 2018) and draw-write-talk (James, Drake, & Winner, 2018). These arts-based forms of data collection focused on participants' experiences of resilience enablers (e.g., the family). These methods involved the use of participants' bodies, drawing utensils, and paper. Through the use of these arts-based methods, we researchers were able to allow for creativity and discussions that were not limited to the questions we posed but, rather, allowed for participants to be as creative as they desired, and then to reflect on their models, drawings, and figures in a personal and reflective manner. These methods also allowed participants to be culturally and contextually specific when discussing resilience.

1.9.5   Data Analysis and Interpretation

I have elected to make use of inductive thematic data analysis. This form of analysis involves systematically reviewing data to identify, arrange, and then explain data according to common themes (Braun, Clarke, Hayfield, & Terry, 2019). The reasons for me choosing inductive analysis, as well as the advantages and disadvantages for this analytic approach, are discussed in Chapter Three (Section 3.7).

1.10   QUALITY CRITERIA

In order to ensure that my research achieves results that are relevant to my research question, it is necessary to choose methods that directly pertain to my research aims, ensuring that they are trustworthy (Johnson & Rasulova, 2017). According to Guba and Lincoln (1994), specific quality criteria must be adhered to, namely, credibility, dependability, transferability, confirmability, and authenticity. These will also be discussed further in Chapter Three (Section 3.8) and will, therefore, not be discussed in detail in this chapter.

1.11 ETHICAL CONSIDERATIONS

My ethical considerations will be discussed in Chapter Three. My study formed part of a larger study known as RYSE. RYSE received ethical clearance from the Ethics Committee, Faculty of Education (UP 17/05/01). When I interacted with the participants, I was careful to work ethically, as explained in further detail in Chapter Three (Section 3.9).

1.12 CONCLUSION

This chapter served as an introduction to my study. I have explained that I have chosen to use a phenomenological design to conduct my research focusing on how families enable the resilience of the adolescents residing in the eMbalenhle area. In Chapter Two, I will discuss what is known, through literature, about the risks associated with the petrochemical industry, as well as the ways in which families champion the resilience of adolescents in disadvantages communities.

2.   CHAPTER TWO: LITERATURE REVIEW

2.1   INTRODUCTION

I am aware that families can place youth at risk (Gerard & Buehler, 1999), however, I am interested in how families support adolescent resilience, particularly when adolescents are challenged by risks associated with the petrochemical industry. Resilience is viewed as an individual's positive adaption to adversity, and may be supported by particular resources (Riggenbach, Goubert, van Petegem, & Amouroux, 2019). This chapter will briefly summarise what literature, both South African as well as international, already exists on the risks associated with the petrochemical industry, as well as the resilience of adolescents, with specific reference to how this resilience is facilitated by the family. Although I will be focusing on resilience enabled by the family, I am aware that resilience may also be enabled by personal and community factors (See Table 2.1).

Table 2.1: Personal and community enablers of resilience[1]

Personal Resilience Enablers	Community Resilience Enablers
Motivational factors such as self-confidence, adaptability, hopefulness, and pride in academic achievements.	Protective community institutions e.g., religious establishments, schools, libraries, and hospitals.
Cognitive abilities e.g., problem-solving skills, academic achievement, and coping tactics for stress management.	Community representatives e.g., elders, teachers, mentorships, and social workers.
Social competencies and behaviour.	Extra mural activities e.g., sport and cultural events.
Emotional regulation and stability e.g., happiness and anger management.	Community initiatives e.g., agricultural endeavours, marches, and festivals.
Physical abilities and well-being e.g., good health, talent development, and fitness.	Social well-being amenities e.g., grants.
	Employment opportunities.

---

[1] Banyard, Hamby, & Grych, 2017; Bhana & Bachoo, 2011; Buckner et al., 2003; Cameron, Fox, Anderson, & Cameron, 2010; Casale, 2011; Cook, 2000; Cortina et al., 2016; Dass-Brailsford, 2005; Dias & Cadime, 2017; Ebersöhn, 2008, 2012; Ebersöhn et al., 2012; Ebersöhn & Ferreira, 2011, 2012; Ebersöhn & Maree 2006; Ebersöhn, Nel, & Loots, 2017; Fernando & Cooley, 2016; Henman, 2001; Jefferis, 2016; Kumpfer, 1999; Lemay, Clark, & Greenberg, 2010; Lorenzo, Biesanz, & Human, 2010; Malindi, 2014; Malindi & Machenjedze 2012; Malindi & Theron, 2010; Mampane, 2012, 2014; Mampane & Bouwer, 2011; Martin, Kuiper, Olinger, & Dance, 1993; Masten, 2014; Masten et al., 1999; Mohamed & Thomas, 2017; Phasha 2010; Reich, Zautra, & Hall, 2010; Segal-Caspi, Roccas, & Sagiv, 2012; Silverman & Deuster, 2014; Simões, Matos & Morgan, 2015; Skovdal, Ogutu, Aoro, & Campbell, 2009; Smokowski, Reynolds, & Bezruczko, 1999; Strachan, Côté, & Deakin, 2011; Thabethe, Mbatha, & Mtapuri, 2016; Theron, 2015, 2016a, 2017a, 2017b; Theron, Liebenberg, & Malindi, 2014; Theron & Malindi, 2010; Theron & Theron, 2010; Theron, Theron, & Malindi, 2013; Ungar, Connelly, Liebenberg, & Theron, 2017; van Breda 2017a; Zolkoski, Bullock, & Gable, 2016.

2.2   RISKS ASSOCIATED WITH THE PETROCHEMICAL INDUSTRY

Risk can be defined as a potential for vulnerability, loss, or harm as a result of an event or adverse consequences (Herrera, Flannery, & Krimmer, 2017). The petrochemical industry is regarded as a high-risk phenomenon due to the large amounts of toxins, in the form of flammable and explosive materials, used in industrial processes such as manufacture (Guo, Yuan, Song, Peng, & Wang, 2011). It has been found that technological hazards, including toxic waste sites and chemical manufacturing, pose a more significant health threat than that of natural hazards such as floods and earthquakes (Cutchin, Martin, Owen, & Goodwin, 2008). Cox, Irwin, Scannell, Ungar, and Bennett (2017) identified youth as the population group most affected by the natural resource extraction industry (such as the extraction of oil in the petrochemical industry), and found that the industry affected their functioning as well as the functioning of their families and communities. I have elected to discuss the risks pertaining to my study under the following subheadings: health and environmental risks (e.g., pollution), psychosocial risks (e.g., stress), and economic risks (e.g., poverty), because these are the most common risks I identified when reviewing literature.

2.2.1   Health and Environmental Risks and Their Impacts on the Family

Some of the biophysical risks associated with residing in a community that is affected by the petrochemical industry include exposure to fumes, smoke, and dust, as well as extreme environmental conditions and increased mental and physical health risk (Cox et al., 2017). Mental and physical health risks have been identified as negatively affecting parenting. For example, according to Muzik et al. (2015), maternal mental illness (e.g., depression) has been found to negatively affect parenting (e.g., not recognising their infant's distress cues). This may also lead to inadequate mother–child attachment and, consequently, affect a child's development negatively.

Air pollution can be caused by industrial processes, and includes gases, chemicals, metals, and small particles (Costa et al., 2017). Air pollution has been seen as a factor contributing to certain health concerns such as chronic and acute respiratory and cardiovascular difficulties (Kazi et al., 2012). It has been found that even exposure to moderate levels of air pollution increases respiratory symptoms

(Thabethe, Engelbrecht, Wright, & Oosthuizen, 2014). Effects may be acute or chronic and include reduced lung function, asthma, increased respiratory diseases, and increases in allergic illnesses (Altuğ, et al., 2013). Downey, Crowder, and Kemp (2017) reported that single-parent families were more susceptible to health issues in areas affected by pollution. Family members are usually responsible for the care of members who are unwell, which has been found to potentially affect their own emotions negatively and create additional stress—then affecting their own mental health (Bauer & Sousa-Poza, 2015).

In an article by Lavy, Ebenstein, and Roth (2014), data sets from matric exams written in Israel for over 400,000 subject examinations were reviewed alongside pollution data during the period 2000–2002. Results proved that on days when pollution rates were higher, academic scores were lower—not only in short-term results but also in the long term. In South Africa, a study by White, van der Walt, Ravenscroft, Roberts, & Ehrlich (2009) focussed on over 3,000 children aged one to 14 years, attending schools in the Milnerton area of Cape Town. The study was done to establish whether asthma symptoms were more prevalent in children living near a petrochemical refinery than in those residing in other areas of Cape Town. This study found that 2,361 children living in the area affected by these emissions did, in fact, display a higher prevalence of asthma symptoms. Similarly, another study conducted in eMbalenhle found that the population had been exposed to exceedingly high levels of air pollution, negatively affecting their health. This exposure occurred through 24-hour inhalation of harmful pollutants resulting from the operations of an energy and chemical company based in Secunda (Thabethe et al., 2014).

Exposure to pollution can also result in death. Hendryx (2009) studied mortality rates, specifically focusing on kidney, heart, and respiratory diseases, in various mining and non-mining regions (i.e., Appalachian counties that mine less than 4 million tons, non-Appalachian counties that mine coal, non-Appalachian coal mining counties, and non-coal mining counties). Results revealed that mortality rates were substantially greater in mining regions compared to non-mining regions, possibly due to increased exposure to pollutants that are a result of the coal mining process. In particular, it has been found that dust caused by coal mining may cause respiratory dysfunction (Marine, Gurr, & Jacobsen, 1988), while water contamination

may lead to irreversible kidney disease (Finkelman et al., 2002). Furthermore, Hendryx (2013) found that families affected by mining in a mountaintop area of eastern Kentucky were more likely to report deaths related to cancer than families residing in non-mining areas. These families who were affected by coal mining noted a number of health problems not limited to, but including, poorer self-rated health, current and lifetime asthma, and a number of other recent or current illness.

I am particularly conscious of the risks relating to coal mines because the Twistdraai mine, part of Sasol Mining in Secunda, was opened in 1980 to produce coal for the Sasol plant ("Twistdraai Coal Mine," n.d.). Sasol Mining manages one of the largest underground coal mining facilities in the world, and supplies more than ninety per cent of the coal mined there to Sasol for production of synthetic fuels and chemicals (Sasol, 2012).

2.2.2   Psychosocial Risks and Their Impacts on the Family

The term "psychosocial" can be broken down into "psyche" and "social." Psyche refers to the consciousness of the mind, psychological inclination or soul of an individual (Mukhopadhyay, 2016), while social refers to that with which we interact around us, such as our family. Psychosocial refers to the way in which individuals interact with their environment through psychology and behaviour, and how this potentially affects their health (Edelman, de Visser, Mercer, McCabe, & Cassell, 2015). Psychosocial risks, such as violence, the HIV/AIDS epidemic, and growing divorce rates (Theron & Theron, 2010), have been confirmed to link directly with the well-being of those associated with the petrochemical industry (Javaid, Isha, Ghazali, & Langove, 2015). Although HIV/AIDS is also a biological risk, communities and families who are affected by HIV/AIDS are challenged by psychosocial risks such as depression (Farinpour et al., 2003), mental health difficulties (Abubakar et al., 2017), low self-esteem (Wang et al., 2018), and an increase in alcohol use (Chakrapani, Newman, Shunmugam, Logie, & Samuel, 2017). Below, I discuss three psychosocial risks affecting the petrochemical industry, namely, violence, HIV/AIDS, and divorce.

2.2.2.1 Violence

Community violence is associated with the petrochemical industry (Ukeje, 2001). For instance, in an article written by Idemudia and Ite (2006), explanations were offered to illuminate the violence that plagued the Petrochemical Niger Delta region of Nigeria. This region is well known for its production of crude oil and, as a result, high levels of community violence due to wealth distribution, availability of resources, marginalisation, negative environmental effects, below average education opportunities, poverty, and unemployment. Community violence has been seen to result in higher rates of externalising behaviours, such as aggression, as well as internalising behaviours, such as anxiety and depression, in youths (Fowler, Tompsett, Braciszewski, Jacques-Tiura, & Baltes, 2009). The effects of community violence are also negative for families (Labella & Masten, 2018).

For example, in studies by Dubow et al. (2010) and Panter-Brick, Goodman, Tol, & Eggerman (2011) centred on families affected by war in Afghanistan and Palestine, it was reported that the effects of violence resulted in increased rates of emotional dysregulation and family violence. In instances where violence affects both youth as well as caregivers, these effects are exaggerated—negatively affecting family relationships and adjustment and potentially generating chronic stress. However, family support has been found to buffer these effects, thus promoting resilience (Betancourt, McBain, Newnham, & Brennan, 2013).

Families are seen as playing an important role in championing the resilience of adolescents. For instance, in a study by Chen, Voisin, and Jacobson (2016), a sample of 3,350 participants who were enrolled in Grades 6 to 8, and had a mean age of 12.48 years, were selected from 16 urban and suburban schools around a university in the Midwest area of the United States. The study found that family processes, such as family warmth, were associated with lower rates of youth delinquency and that family, thus, played an important role in shielding youth from community violence.

Herrero Romero, Hall, Cluver, & Meinck (2018) conducted a study in 40 disadvantaged communities in the Eastern Cape region of South Africa, which included 503 adolescents (aged 10–18 years) who had been exposed to multiple forms of violence. Their study aimed to establish if supportive parenting served as

a shielding factor against school delays (enrolment in a grade below that which is considered age appropriate) for these adolescents. Findings concluded that the greater the frequency of exposure to violence, the worse the degree of school delay experienced by these adolescents. Despite this, Herrero Romero et al. (2018) found that positive parenting and effective discipline by parents served as protective factors, and that supportive parenting did, in fact, have a shielding effect on school delay—despite community violence.

In 2018, the *Ridge Times* (Mathebula, 2018, May 13) reported that the community of eMbalenhle had been affected by gangsterism. In the article, local community members reported that the gangs, usually made up of youth, are a constant threat and that they fear for their lives because these criminal gangs generate violence (e.g., murder) in the community. Additionally, in the same year, the Provisional Police Commissioner condemned the destruction of property that had taken place during protests by the local community—angry community members set fires, destroyed infrastructure, and robbed local shops, resulting in more than 150 people being arrested (Misselhorn, 2018). These examples indicate that community violence is an ongoing risk in the petrochemical community of eMbalenhle.

2.2.2.2 HIV/AIDS

HIV/ AIDS is associated with the petrochemical industry (Goldenberg et al., 2010). For example, in a study by Desmond and associates (2005), 32 participants residing in Tanzania, in a community affected by the petrochemical industry of gold mining, were interviewed. The aim of their study focussed on identifying individuals who are at risk of contracting HIV. Results found that individuals residing in this community were at high risk due to factors such as insecurity, loneliness, impulsive risky sexual behaviour, poverty (sex traded for money), and mobility of inhabitants (e.g., for employment).

In 2015, it was established that more than half (19 million) the number of individuals living with HIV/AIDS, worldwide, resided in African regions (Zegeye, Mbonigaba, & Kaye, 2017), confirming the severity of this disease while highlighting the need to be aware of its effects on individuals, families, and communities and how this impacts resilience. Research has found that HIV not only affects the individual but

the family as a whole, and that youth between the ages of 13 and 29 years account for almost half (40%) of newly diagnosed cases (Joe, Heard, & Yurcisin, 2017).

In some instances, AIDS results in children losing one or both of their parents, in which case other relatives, such as grandmothers, are left to care for these children (Kalomo & Liao, 2018). Furthermore, youth affected by HIV/AIDS experience a variety of associated difficulties such as reduced mental health (Sharp, Penner, Marais, & Skinner, 2019), social stigma (Joe et al., 2017), academic difficulties (Chen & Fish, 2012), economic hardship (Davey, Duncan, Foster, & Milton, 2008), risky sexual behaviours (Benson et al., 2018), and behavioural struggles (Bhana et al., 2016).

In a study by Lachman, Cluver, Boyes, Kuo, and Casale (2013), aimed at determining if effective parenting was affected by AIDS, 2,477 caregiver and child pairs were selected from the KwaZulu-Natal region of South Africa. Children were between the ages of 10 and 17 years, and either resided with a caregiver who was HIV-positive or were orphaned as a result of the virus. Results indicated that parenting in these families affected by HIV/AIDS was, in fact, less optimal when compared to families not affected by the virus. The study found that children orphaned by AIDS or residing with a HIV-positive caregiver were more likely to experience mishandling. Moreover, it was found that caregivers suffering from AIDS displayed less nurturing behaviour due to increased illness, stress, higher rates of poverty, and perceived stigma.

In another study, by Daniels and colleagues (2018), 35 HIV-positive men who engage in sexual relationships with other men were invited to create photo-essays regarding their use of alcohol. The study took place in the Mpumalanga region of South Africa, where excessive alcohol consumption was common. The study found that the men in the study consumed alcohol in order to establish social connections, meet potential partners, and enrich their sexual practices. Furthermore, the study also concluded that the excessive use of alcohol led to multiple relationships and an increase in risky behaviour (e.g., unprotected sex) associated with HIV, specifically, due to the lack of preventative actions and resources such as condoms.

Finally, in a study conducted in Soweto, South Africa, by Earnshaw, Kidman, and Violari (2018), 250 youths who had acquired HIV from their mothers took part in a survey in which they discussed their experiences of internalised stigma (which stemmed from their own HIV status) and associative stigma (which stemmed from their mothers' HIV status). The results indicated that internalised stigma was linked to an increased possibility of depressive symptoms, while associative stigma was linked with an increased possibility of depression as well as substance abuse. Importantly, both forms of stigma were found to negatively affect the youth who experience them. Considering the vast number of psychosocial risks associated with HIV/AIDS, it is vital to investigate how families affected by HIV/AIDS can support, and be supported to support, adolescents impacted by HIV/AIDS to be resilient.

In 2013, Mpumalanga, the province in which eMbalenhle is located, was identified as having the second highest number of reported HIV infections (Green, 2013). In 2015, the local mining company, Sasol, gave R970,340 to home-based caregivers in the Secunda community to assist them in supporting the psychosocial needs (e.g., emotional well-being and behavioural changes) of their families, and those whom they care for, affected by HIV/AIDS (Oosthuizen, 2015). Likewise, the Malaika orphanage (TakingITGlobal, n.d.) in eMbalenhle strives to assist young people affected by HIV/AIDS (i.e., who are infected themselves, are orphaned due to a caretaker's passing due to HIV/AIDS, or who are exposed to HIV/AIDS in the community). One opportunity Malaika Orphanage offers to youth is to join the Teens Club, a setting focussed on supporting the psychosocial needs of members: youth are encouraged to express themselves freely, a positive self-esteem is promoted, relationship advice is offered, and counselling and guidance is provided. These are just two examples of how the community of eMbalenhle attempts to support the psychosocial needs of those affected by HIV/AIDS on a personal and family level.

2.2.2.3   Divorce

Divorce is associated with the petrochemical industry (Okoji, 2002). For example, the presence of sex workers (Moiloa, 2009), mobilisation of population due to limited work opportunities in the community, relocation due to community violence (Green, 2018), and increasing rates of HIV infection (Green, 2013) may be risks that result in an increase in the rate of divorce. Divorce can negatively affect physical,

emotional, and social well-being (Bertoni, Carrà, Iafrate, Zanchettin, & Parise, 2018), as well as all aspects of a family such as the roles of members, financial status, relationships, and the ability of family members to adapt and function effectively (Henderson & Thompson, 2000).

According to Hill, Yeung, and Duncan (2001), divorce has been found to exhaust the financial status and resources available to a family, creating additional hardship. Additionally, divorce has been found to decrease monitoring of children's behaviours and create opportunities for children to engage more closely with peers (Duh, Benmoyal-Bouzaglo, Moschis, & Smaoui, 2014). Disturbances within South African families, such as divorce, have been found to affect a child's access to certain resources, interrupt their sense of security, and affect relationships with other family members (Martelo, Cavanagh, Prickett, & Clark, 2016).

For example, in an article by Amato (2000), in which he discussed the consequences of divorces, it was established that, in adults, divorce has been linked to increased rates of depression and alcohol use, decreased self-acceptance and psychological well-being, as well as greater economic difficulty. In children affected by divorce, it has been found that they often achieve significantly less academically, display increased behavioural and conduct problems, show difficulty in psychological adjustment, and struggle with self-concept and self-esteem. In contrast, in some instances, divorce may lead to positive changes such as personal growth, greater career opportunities, improved happiness (Amato, 2000), improved agreeability, and better conscientiousness (Bleidorn, Hopwood, & Lucas, 2016).

In a study by Schaan and Vögele (2016), 199 young adults (mean age of 22.3 years) were surveyed in order to assess their mental well-being, resilience, and possible sensitivity to rejection. Participants from divorced families reported poorer resilience and increased symptoms of trauma and rejection. Findings went on to explain that if the resilience of these youth were to be boosted through prevention programmes, the long-term effects of divorce could be reduced and mental well-being improved. A possible explanation for these negative symptoms was provided by Bonanno, Romero, and Klein (2015) who said that events such as divorce or remarriage might be considered to be acute stress factors that affect how a family adjusts to change. If this adjustment is able to effectively maintain stability, the family is said to show

resilience. Hanson, McLanahan, and Thomson (1998) proposed that certain resources might assist in championing resilience in families having experienced divorce. They acknowledged three types of resource in particular: economic resources (e.g., income), parental resources (e.g., degree of parental involvement, monitoring, and discipline), and community resources (e.g., family ties to social support systems).

Similarly, in a study by Greeff and van der Merwe (2014), the potential of resources to champion resilience was also noted when 98 South African families, consisting of a single parent and an adolescent child, who had experienced the upset of divorce, participated in a survey. The study found that families experienced divorce differently and thus identified numerous factors as facilitating their resilience. Interestingly, results concluded that the most important factors were good relationships, the meaning subscribed to the event, the attitude of family members, economic stability, and religion. Additionally, Greeff and van der Merwe suggested that a family's adjustment after divorce improves over time when utilising the resources available to them.

According to government statistics for 2015 (Stats SA, 2018), 1,747 divorces (6.9 per cent of the population) were granted to individuals residing in the province of Mpumalanga, in which eMbalenhle is located. Considering the impacts that divorce has on the psychosocial well-being of both families and adolescents, it is necessary to establish what enables the youth residing in eMbalenhle to do well, despite the effects of divorce.

2.2.3   Economic Risks and Their Impact on the Family

In many petrochemical industries, employment is time delimited (Cox et al., 2017) resulting in what is known as the *boom-bust cycle*. The boom-bust cycle can be defined as a population rapidly increasing (boom), followed by a considerable decline (bust), in which the population becomes much smaller (Strayer et al., 2017). This boom-bust cycle is largely affected by the availability of employment. Consequently, when employment is scarce, individuals experience an increase in financial stress due to poverty.

Poverty has been identified as an ongoing stressor that has been linked to dysfunctional adaptation such as mental illness and various physical conditions (Southwick, Bonanno, Masten, Panter-Brick, & Yehuda, 2014). Furthermore, poverty has similarly negative effects on families. It is worth noting that not all families or individual members experience stress in the same manner. Conger, Rueter, and Conger (2000) wrote an article in which they suggested that adolescents experiencing economic instability within their households may experience increased risk of anxiety, depression, and other behavioural difficulties. Additionally, adolescents' adjustment may also be affected by the emotional distress of parents who experience economic restraints or marital conflict as a product of economic hardship.

The family stress model has been employed to identify how family resources can diminish or exaggerate economic stress—by considering how economic strain leads to further pressures, and how these pressures might result in emotional distress such as interrupted parenting and disturbed bonding patterns between the parent and child, thereby, negatively impacting resilience (Theron, 2016a). According to Botha, Wouters, and Booysen (2018), the economic status of a family directly impacts the well-being of its members, therefore, reduced household resources may contribute to raised stress levels in the family. Dolbin-MacNab and Yancura (2018) found that in areas of extreme poverty, grandparents often assist with childcare, at times assisted by parents financially. However, in some cases, grandparents are left to run multigenerational households on their own, facing the risk of financial exploitation and desertion.

Similarly, in a study by Conger et al. (2002), 897 U.S. families (475 located in Iowa and the remaining 422 in Georgia) were included to investigate African American families who had a child between the ages of 10 and 11 years. Their results further supported the family stress model, finding that economic hardship increased the economic pressure on families, resulting in increased levels of distress that had a negative effect on the relationships in the family, and leading to outcomes such as less successful child adjustment.

According to Black and colleagues (2017), young children, in particular, are at risk of developmental delays such as interrupted brain development and delays in learning (e.g., in language) due to poverty. Poverty not only results in immediate risks, but also increases the probability of additional adversities such as family stress, abuse, and direct and indirect contact with violence. In addition, a study by Siu & Shek (2005), which included 1,519 secondary school learners (11 to 18 years) from four schools in Hong Kong, found that the economic hardship of families may affect adolescent adjustment negatively. Their study concluded that stress brought on by current economic status, as well as concern regarding future economic difficulties, plays a role in the problem behaviour of adolescents.

I believe that economic risks like the ones described above are common in eMbalenhle. eMbalenhle has experienced a number of protests relating to the lack of employment of locals. They have demanded that Sasol prioritise the employment of local residents (Mathebula, 2016, January 14; 2016, January 22; 2017; 2018, February 8). This implies that unemployment rates in the local community is high, leading to poverty, increased crime, and community members seeking employment further from home.

2.3 FAMILY FACILITATED RESILIENCE

I am mindful that families can constrain resilience, particularly when the family is dysfunctional or severely challenged by stressors (Walsh, 2002). For example, Conger, Ge, Elder, Lorenz, and Simons (1994) conducted research in an area of economic disadvantage in the US Midwest, including 180 boys and 198 girls over the course of three years while participants completed Grades 7, 8, and 9. Conger and colleagues found that when families experience elevated levels of stress, family interactions become antagonistic. This has been referred to as *coercive family processes,* and suggests that families may at times increase the possibility of adverse consequences (Henry, Hubbard, Struckmeyer, and Spencer, (2018). However, because my study is of a limited scope, and I am interested in understanding how families support resilience in the face of stressors associated with the petrochemical industry, I do not report on how families could constrain resilience.

It has been found that individual vulnerability to adversity can be counteracted by positive interpersonal influences, for example, by family members (Cozolino, 2014; Siegel, 2012). And, according to Ungar and colleagues (2017), meaningful relationships with family members were seen to provide support to children experiencing stress. These positive relationships have been identified as providing youths with a sense of belonging, feelings of love, and emotional support. Similarly, Afifi and MacMillan (2011) found that supportive relationships within the family facilitated resilience when children experienced abuse.

As clarified in Chapter One, for the purposes of my study, the concept of family includes not only the nuclear family but members of the extend family as well, and can be structured as any of the families listed above. Despite past and present challenges, many South African families have shown resilience in the face of social, physical, and economic devastations, allowing them to endure and thrive and allowing them to facilitate the resilience of adolescents (Raniga & Mthembu, 2017). The quality of relationships between family members, as well as the cohesion within the family entity, affects mental health and behaviour amongst youth who have been exposed to adversity (Ungar, 2004). It is, thus, important for my study to consider how families may champion resilience through their shared efforts. I structure how families enable resilience based on three dimensions discussed by Masten & Monn (2015), namely, families providing resilience-enabling resources, families (parents and extended family members) parenting well, and families having healthy habits.

2.3.1   Families Providing Resilience-Enabling Resources

Resources can refer to those elements that support survival and personal functioning, or address psychological needs and educational requirements (Ungar, 2015). Furthermore, resilience-supporting resources enable adolescents to cope in the face of adversity (Ungar, 2015). As detailed next, the resilience literature reports that families play a role in making a variety of resilience-enabling resources available to adolescents (Masten, 2018). For the purposes of my limited study, I will only be discussing three such resources, namely, financial resources, education as a resource, and safety and security as a resource.

2.3.1.1 Financial resources

The socioeconomic status of a family affects a child on multiple levels from health to socioemotional outcomes, and influences the family's access to material resources (Bradley & Corwyn, 2002). An adequate income (i.e., financial resources) allows families to promote resilience by connecting its members to appropriate support systems and resources (Vermeulen & Greeff, 2015).

For example, Jeon, Buettner, and Hur (2014) conducted a study including 420 children from 48 early childcare programmes, in a Midwest state in the US. These researchers found that children from homes where cognitive stimulation was minimal, due to family socioeconomic risks, displayed poor cognitive skills as well as socioemotional difficulties. In other words, their study indicated a link between the socioeconomic status of family (i.e., limited or adequate financial resources) and the resulting well-being of children, further indicating that economic resources assist resilience. Similarly, Walsh (2016) found that families with better financial stability tend to be more resilient.

South African studies (e.g., Dass-Brailsford, 2005; Petersen et al., 2010) also reported the importance of families supporting adolescents to access resources, including basic resources like food, shelter, or clothing. For instance, in a South African study by Bachman DeSilva et al. (2012), a sample of 637 isiZulu-speaking children between the ages of 9 and 15 years of age, of whom 157 were orphans and 480 were non-orphans, were selected from 252 primary and secondary schools in the Amajuba district in KwaZulu-Natal. The study corresponded positively with international findings—positive socioeconomic factors relating to the household, such as food security, serve as a protective factor, enabling resilience, while food insecurity was associated with symptoms of anxiety and depression, inhibiting resilience. Likewise, Collishaw, Gardner, Aber, and Cluver (2016) did a study with 1,025 children and adolescents orphaned by AIDS and residing in urban settlements in the region of Cape Town, South Africa. Participants were selected from nine schools, 18 community organisations, and house visits. Their study, too, found that youth who enjoyed food security, often provided by caregivers with adequate resources, showed greater mental health resilience. These studies confirm the resilience promoting potential of financial resources.

2.3.1.2 Education as a resource

Another important resource to be considered is that of education. The provision of education can be seen as *structural resilience*, which refers to structures within the community that provide resources that are seen as maintaining human dignity and therefore promoting resilience (Steven et al., 2014). Education has been viewed by both adolescents and their family members as a resource that paves the way for future success, improves individual well-being, and may positively affect their families and communities (Theron & van Rensburg, 2018). Furthermore, families have been found to provide support that assists with academic goals and thus facilitates resilience (Lee, Rojewski, Gregg, & Jeong, 2014).

For education to be a resource, it is important to understand how families affected by disadvantage can best support adolescents. One such example can be found in a study by Schoon, Parsons, and Sacker (2004), in which 9,000 adolescents (16 years of age) from socioeconomically disadvantaged and advantaged environments were selected in an attempt to determine the effects of resources on their education and, specifically, on their transition from school to work. Importantly, results indicated that a difference exists between adolescents who are privileged (individuals with more access to resources) and those who are less privileged (individuals from disadvantaged backgrounds). Schoon and associates (2004) found that for underprivileged adolescents, motivation to obtain an education, future-oriented career aspirations, their caregivers' involvement at school, and parental hopes served as important protective factors to enable their resilience.

Likewise, in a study by Phasha (2010), with 20 young adult black individuals residing in disadvantaged communities in South Africa, reported that education was an important resource, and that the support and heightened expectations of family members encouraged these young adults to work harder. Motha (2018) also considered education in her study, which focused on orphaned children aged 9 to 14 years living in an urban area in South Africa. She noted that, in South African culture, the role of the extended family in caring for children is celebrated. All the children in this study reported that their family's (including extended family members) assistance with homework, and interest in their academic progress, supported them in their education.

In both the international as well as the South African studies discussed above, education has been highlighted as a resource. It should also be noted that families could add additional value to this resource.

2.3.1.3 Safety and security as a resource

A family's environment (e.g., the exposure of their households and communities to risks such as violence, war, etc., or protection from these) often determines the degree of safety (both physical and emotional) that family members experience, which in turn, determines whether resilience will be fostered or impeded (Hobfoll, Stevens, and Zalta, 2015). Family is an important source of protection for children, especially those affected by violence, who experience a lack of security. For example, in the face of adversity, a child's close relationship to her or his caregiver may potentially create a sense of safety that acts as a protective factor (Feder, Nestler, & Charney, 2009). Additionally, children faced with dangerous environments often seek safety from those closest to them (e.g., family) and it, thus, becomes the family's responsibility to assist in promoting healthy development and resilience (Diab, Peltonen, Qouta, Palosaari, & Punamäki, 2015). Undoubtedly, children require those around them (e.g., caregivers) to create safe environments in order for them to learn trust in relationships later on in life (Osofsky, 2018).

Children and families who are forced to relocate due to war and violence often have difficulty adjusting due to psychological trauma (Fazel, Reed, Panter-Brick, & Stein, 2012). Moreover, areas affected by war and violence create negative physical environments for adolescents due to criminal activity, illegal drug trafficking, and availability of weapons (Molnar, Gortmaker, Bull, & Buka, 2004). In an article by Denov, Fennig, Rabiau, and Shevell (2019), resilience is discussed as stemming from family actions directed at keeping children safe despite exposure to violence. Their article tells the story of David, residing with his mother after his father's death, in a town affected by war. Fearing her son would be recruited as a soldier, David's mother protected him by hiding him from recruiting soldiers seeking young men to join the military and was killed in the process. David faced many more challenges after this—he lived on the streets, exposed to violence, and left the area without resources. However, he explained that he would not have been able to show resilience without the lessons his mother had taught him. Denov et al. (2019)

labelled this *intergenerational resilience*, and pointed out the potential of family to provide individuals affected by violence, war, or conflict, with protective factors that could result in better resilience. In the above example, David's mother's willingness to hide her son kept him from being forcefully taken by recruitment officials and, potentially, suffering additional harm associated with being a child soldier in the war. This is an example of how parents can provide physical safety, preventing their children from being harmed by outside forces such as war officials.

Another example of how families can provide physical security to their adolescent children comes from Phasha (2010) who reviewed 20 cases of young women between the ages of 16 and 23 years who had been sexually abused. One participant reported that her mother kept her physically safe by walking with her to and from school every day after her ordeal of being abducted and gang-raped. Similarly, in a study by Malindi (2014), 30 girls between the ages of 12 and 17 years and who were living on the streets in South Africa, were selected to partake in a draw-and-write activity. Findings from her study indicated that children sometimes choose to live on the streets in an attempt to escape living arrangements that cause distress, and they seek groups who are able to make them feel supported and secure. One participant, in particular, shared that she used prayer as a means to help her cope, which assisted her to feel safe. Although all the studies confirmed that adolescents seek security, the final study illustrated that security is not always provided by the family who, at times, may contribute toward, or be responsible for, the risks experienced by youth—rather than serving to protect them from harm.

2.3.2 Families Parenting Well

I purposefully chose the heading "Families Parenting Well" because it is often not only the parents who provide parenting but also extended families (Wild, 2018). In some instances, it is the grandparents who provide childcare (providing mentoring, financial aid, or emotional support) either as assistance or, in some cases, as surrogate parents (Dolbin-MacNab & Yancura, 2018).

In what follows, I discuss parenting and explain what parenting well entails in terms of parental monitoring (e.g., supervision and communication, DeVore & Ginsburg, 2005; Fletcher, Walls, Cook, Madison, & Bridges, 2008), parental practices, which include parenting style (e.g., authoritative style, including support and warmth,

Calafat et al. 2014), and affective support (e.g., showing understanding and encouragement, Carr & Kellas, 2017), which have been seen to affect a child's well-being. I am aware that parenting well may also be shaped by parental control, gender, parental education, ethnicity, and diversity, as well as perceptual differences between adolescents and their parents (DeVore & Ginsburg, 2005), however, given the limited scope of my work, I will not be discussing these in my dissertation.

2.3.2.1 Monitoring and supervision

Parental monitoring can be defined as the behaviours parents practise in paying attention to, and keeping track of, the location and activities of their children, as well as creating a structured environment for them by establishing rules (Racz & McMahon, 2011). Parental monitoring entails open lines of communication between adolescents and their parents, giving the parent a greater knowledge of their child's whereabouts and activities (Borawski, Ievers-Landis, Lovegreen, & Trapl, 2003). Cavanagh, Stritzel, Smith, and Crosnoe (2017) found that adolescents whose parents lived at home and provided monitoring were less likely to be involved in risky behaviour. Similarly, Fayyad et al. (2017) found that parental supervision of adolescents, who resided in communities in South Lebanon that had been affected by war, promoted the resilience of their adolescent children. And, van Rensburg, Theron, and Rothmann (2015) concluded that a lack of parental supervision created a potentially adverse environment for youth affected by risk (e.g., exposure to violence). Furthermore, parental monitoring can be seen as changing over time given that it is necessary to adapt the structure of supervision according to an adolescent's developmental level (e.g., parents may need to allow adolescents more freedom as they become older, Racz & McMahon, 2011).

In a study by Richards et al. (2004), which included 167 African American participants with a mean age of 12.46 years, from the 6th, 7th, and 8th grades, and from eight residential areas in the Chicago region, it was found that adolescents experienced higher rates of problematic behaviour when unsupervised. Likewise, Ungar (2004) highlighted the importance of parental monitoring for teens residing in areas affected by high levels of risk. His study included two groups of participants. The first included 21 adolescents between the ages of 13 and 17 years from urban

areas in Eastern Canada. The second group included 22 participants who attended a forensic treatment institute in Eastern Canada. His findings have shown that youth whose resources are limited seek parental monitoring as a method of assisting them to make meaning in their lives and form healthy identities.

In a study by Pittman and Chase-Lansdale (2001) that included a sample of 302 African American adolescent girls and their female caregivers, residing in three disadvantaged areas in the southern regions of Chicago, it was found that adolescents whose mothers are disengaged, providing less supervision, are more susceptible to negative psychological and behavioural outcomes. Pittman and Chase-Lansdale also found that adolescents' well-being was affected negatively when experiencing low levels of parental monitoring and warmth.

In a study involving 1,060 HIV-positive adolescents between the ages of 10 and 19 years, and from 53 government institutions in South Africa, Toska et al. (2017) explained parental monitoring as the supervising of an adolescent's activities, and putting in place a rule system for the home environment. Parental monitoring was identified as a resilience-promoting factor due to its effectiveness in reducing unprotected sex among these adolescents. In situations where a child has lost one or both parents to AIDS, these children are often cared for by extended family members (Kalomo & Liao, 2018). Considering these studies, it can be concluded that parental monitoring and supervision assist adolescents in being resilient, whereas a lack of supervision might inhibit resilience.

2.3.2.2   Parenting style

Good parenting practices have previously been identified as championing resilience (Masten, Cutuli, Herbers, & Reed, 2009). Parenting practices include the attitudes and behaviours of parents (Huang, Nam, Sherraden, & Clancy, 2019), and are defined as the actions parents take in teaching and socialising their children (Spera, 2005), and the degree and nature of parents' involvement (Holtrop, McNeil Smith, & Scott, 2014). Furthermore, it includes those actions that are rooted in affect (warmth), support and guidance, family cohesion, effective management of disagreements (discipline), and healthy expressiveness—all of which are seen to effect the acquisition of values (both as an individual as well as a member of the collective) that allow adolescents to meet the demands of their social environment

(Prioste, Narciso, Gonçalves, & Pereira, 2015). Parenting practices are thus undoubtedly culturally and contextually specific (Thompson et al., 2017).

Three commonly identified styles of parenting are authoritarian (focussing on strict rules, high expectations, and obedience with little opportunity for negotiation and a lack of nurturing), permissive (focussing on the desires of the child with few rules or expectations, but a great deal of love), and authoritative (focussing on responsible and assertive parenting, with high expectations but also with good responsiveness and providing the possibility of negotiation, Ritter, 2005). The authoritative style of parenting has been associated with better resilience, while the authoritarian and permissive styles of parenting have been linked to decreased resilience (Gonzalez, 2017; Perreira et al., 2019; Zhai et al., 2015).

In a study by Milevsky, Schlechter, Netter, and Keehn (2007) that included 272 participants from the 9th, 10th, and 11th grades in schools from the Northeastern region of the US, it was established that parenting style affects the well-being of adolescents in a number of ways. The authoritative parenting style, in particular, was found to lower rates of depression and increase life satisfaction and self-esteem, leading to better life adjustment. Juang and Silbereisen (2002) further explained the effects of positive parenting practices, such as providing support and being involved in their child's schooling, as being associated with better school success when compared to practices in which parents behaved punitively. Additionally, such positive parenting practices have been identified as playing a crucial role in the development of good metal health and fewer behavioural difficulties in adolescents (Hair, Moore, Garrett, Ling, & Cleveland, 2008).

In a study by Kritzas and Grobler (2005), 360 matric pupils residing in Bloemfontein were surveyed on the topic of their parents' particular parenting styles (e.g., authoritative parenting style) in relation to their coping ability. Results found that cultural differences existed between participants. For instance, mothers who were authoritative enabled white adolescents to employ coping techniques focussed on emotion and coherence, but resulted in black adolescents employing coping techniques that were focussed on problem solving. Furthermore, the combination of one authoritative parent and one permissive parent resulted in a sense of cohesion for white adolescents, but not for black adolescents. Despite cultural differences,

the study proved that resilience is, indeed, affected positively by positive parenting practices.

These findings were further supported in a South African study by Cluver and colleagues (2018), in which a parenting programme focussed on abuse and parenting practices was implemented with 552 families residing in the Eastern Cape region of South Africa. Results of this controlled parenting programme saw parental involvement improve, supervision rates increase, better financial management, and improved family planning—resulting in adolescents being involved in less dysfunctional behaviour, indicating positive adjustments resulting from optimal parenting practices.

2.3.2.3   Affective support

Walsh (2015) concluded that resilience in children has been found to be strengthened when a parent or extended family member provides affective support and unconditional acceptance. For example, a 6-year study focusing on 214 first-generation university students in the northern region of California found that students who received emotional support from their families overcame challenges more effectively and ultimately graduated (Azmitia, Sumabat-Estrada, Cheong, & Covarrubias, 2018).

The above applies to the resilience of South African children and adolescents too. For example, in a study by Theron and Theron (2010), in which 23 articles relating to resilience were reviewed, nine of these found that protective resources relating to families, such as supportive parents (e.g., providing love) and support from extended family members, enabled resilience. In a follow-up to the abovementioned study, 61 articles were reviewed by van Breda and Theron (2018) in an attempt to better understand how South African adolescents' resilience is championed. They found that affective support, provided by interpersonal relationships, was an important resource for resilience. Similarly, according to Wild (2018), South African grandparents' involvement (e.g., providing motivation, reassurance, and affective support) in the lives of their adolescent grandchildren resulted in less internalising behaviour and reduced emotional problems—allowing me to conclude that familial involvement, in which affective support is provided, can be seen as a potential resource in championing resilience.

Theron, Theron, and Malindi (2013) helped to more clearly identify what is involved in emotional support in their study that included 11 adult advisory panel members from a rural region of the Free State. They found that love and care from family members have been seen as forms of support that strengthen adolescent resilience. Other South African researchers have also recognised that families hold the potential of providing love, protection, and security (Raniga & Mthembu, 2017), and that families who have been found to display warmth (Isaacs, Roman, & Savahl, 2017; Lind et al., 2018; Vermeulen & Greef, 2015), stability, and provide encouragement (Hall & Theron, 2016), appear to champion adolescent resilience.

Similarly, in the Thabo Mofutsanyane District of the Free State province, a study was conducted with 1,137 adolescents exposed to adversity. Van Rensburg, Theron, and Rothmann (2018) found that resilience of these adolescents was championed not by the mere presence of a caregiver, but by the quality of the relationship with a caregiver, for example, the caregiver's ability to bond and show emotional support to adolescent.

In my final example of a South African study that speaks to the value of families providing emotional support, namely, the study by Bireda and Pillay (2018), 10 adolescents between the ages of 12 and 14 years, located in a community-based welfare institution in Soweto, were considered. Here too, emotional support from the family championed resilience in orphans affected by AIDS. Likewise, acceptance and warmth shown by caregivers resulted in better academic performance and fewer days absent from school in a study by Osuji and associates (2018), in which 346 orphaned adolescents from rural schools in the Southwestern district of Uganda, as well as their caregivers, were surveyed.

2.3.3 Families Having Healthy Habits

In order to understand resilience better, it is necessary to carefully consider the habits of the system as a whole, including the transactional processes (or interactions) found in a family (Walsh, 2016). Family interactions can be defined as interactions, within the social environment or situation, between one individual and others (Aksan, Kisac, Aydın, Demirbuken, 2009). In the face of adversity, a number of habits act as protective factors, such as family togetherness, effective communication, the passing down of beliefs that assist in identity development, and

encouraging routines and rituals (Masten & Monn, 2015). For the purposes of this section of my literature review, I limit my discussion of resilience-enabling family interactions to communication, routines and rituals, and cohesion.

2.3.3.1   Communication

It has been found that resilience is enabled through the processes of meaning making that occur in a family as a result of the interactions of family members. However, when a family unit experiences a crisis, this might negatively affect interaction patterns and, potentially, lead to altered functioning (Patterson, 2002a, 2002b). Interactional processes such as open communication are necessary in the positive functioning of family members (Finan, Schulz, Gordon, & Ohannessian, 2015). Similarly, effective communication has been linked to better functioning (harmony and happiness) through increased family cohesion and adaptableness (Wang et al., 2015). Annan, Sim, Puffer, Salhi, & Betancourt (2017) also found that better communication within the family leads to improved family dynamics that, in turn, lead to positive long-term changes.

Communication processes have been found to enable resilience when they provide clarity in situations where families struggle or face crisis situations. One way in which this might occur is through emotional expression, however, culture must be carefully considered because this affects the manner in which emotions are expressed and discussed (Walsh, 2003). Communication can be divided into two types, namely, affective and instrumental. Affective communication refers to communication based on nurturing that carries messages of love between family members, and can occur using gestures (varying with culture and context). Instrumental communication refers to the structural aspects that must be communicated by family members, such as assigning roles or the setting of rules (Patterson, 2002b).

In a study by Fonseca, Crespo, McCubbin, and Relvas (2017), 332 participants between the ages of 18 and 76 years (living in Portugal) were invited to complete the Family Problem Solving Communication (FPSC) measure to assess family functioning. Family communication, when clear and openly expressing emotion (i.e., affective communication), was found to champion resilience through facilitating effective stress management and functioning. Similarly, in a study by Greeff and Nolting (2013), 40 families from the Western Cape region of South Africa

participated in a questionnaire about what assisted them in adapting following their child being diagnosed with a developmental disability. Children who were diagnosed were aged between eight and 18 years. Results showed that communication in which family members showed support toward one another was the most essential element required for positive adjustment.

Carver, Elliott, Kennedy, and Hanley (2017) reviewed 42 articles focussing on communication and connectedness between adolescents and parents—and how this might serve as a protective factor against substance (e.g., cigarettes, alcohol, and drugs) abuse. They found that when parent–child connectedness was high, communication was more effective because adolescents were more willing to engage in open communication, and parents were better able to set rules. However, when a parent used sarcasm or criticism during conversations, adolescents were less likely to feel comfortable in discussions, resulting in higher rates of substance use. Both parents and adolescents agreed that open communication, clear messages, and equal opportunities to speak were most effective when discussing substance use. Carver concluded that, when discussing the use of substances, rather than parents telling adolescents not to use substances, discussions on the consequences and harms resulting from their use, is more effective. This type of communication is an example of instrumental communication. Based on the available literature, it is evident that both affective as well as instrumental communication are required to facilitate resilience.

2.3.3.2   Routines and rituals

Routines and rituals, although different, are of equal importance within a family. According to Fiese and colleagues (2002), routines are based on a message of "what needs to be done," and involve specific time allowances and actions that are repeated. Furthermore, routines are both context and culturally specific and follow the developmental course of the members in a family. In contrast, rituals are based on the message, "this is us," and are based on emotional connection, using activities that establish a member's identity. Rituals are often passed down by earlier generations.

The establishment of rules and routines in a family have been found to lead to positive changes (Cluver et al., 2016) and, when sustained, were found to promote family well-being (Wilder & Granlund, 2014). While reviewing the eight subscales of the Family Time and Routine Index (FTRI), Deist and Greeff (2014) concluded that routine affects multiple areas of family functioning: togetherness, communication, the promotion of order and independence for the child, the establishment of a structured environment for activities such as chores, efforts made to remain connected to relatives, and family management and order within a home. Consequently, disrupted family routines usually negatively affect academic performance and can create behavioural issues by creating stress within the family system (Schmitt, Finders, & McClelland, 2015).

In an article by Crespo and associates (2013), 39 studies, from seven countries, of family routines and rituals were reviewed. The articles focussed on families in which a member was affected by a chronic condition (e.g., HIV, diabetes, cancer) and how this affected members of the family transitioning from childhood or adolescence to adulthood. Three primary functions of routines and rituals were identified: routines and rituals served as calculated resources (planned to serve specific functions relating to the management of a chronic condition), they provided the family with a sense of normalcy, and they fostered emotional support amongst members. First, in terms of routines and rituals serving as a calculated resource, some parents believed that having predictable bedtime routines resulted in feelings of comfort, and avoided anxiety. Bedtime routines also resulted in the development of rituals such as quality time spent together and storytelling. Second, in terms of routines and rituals providing the family with a sense of normalcy, many parents reported the desire to maintain activities they had before chronic illness had affected them or, simply, to act as other families do. For example, parents reported that eating meals together and creating new rituals when circumstances changed (e.g., the start of a new treatment) assisted them in achieving this. Finally, in terms of routines and rituals fostering emotional support amongst members of the family, family members reported that routines and rituals created opportunities for members to support one another, which contributed to a positive, secure, and supportive environment. Moreover, parents indicated that rituals (e.g., nighttime prayers) assisted them when their children had to undergo painful procedures, and as a method for self-

expression or to mark milestones in treatment (e.g., buying half a cake when a member was halfway with chemotherapy). Crespo et al. (2013) concluded that families play a central role in promoting resilience among their members, despite chronic illness.

Similarly, Spagnola and Fiese (2007) explained that routines in a family provide structure (based on repeated practices) necessary to guide behaviour and support development though communication and dedication of time in a meaningful manner. Furthermore, Black and Lobo (2008) wrote that rituals require interactions in which generations transfer information, thus maintaining family-of-origin beliefs and involving activities that promote relationships within families that may be preserved even during periods of crisis. Family rituals have been linked to assisting adolescents in establishing their identities and having better self-esteem, while lowering rates of conduct-related issues (Hair et al., 2008).

In a study by Malaquias, Crespo, and Francisco (2014), 248 Portuguese students, between the ages of 15 and 20 years, completed self-report questionnaires regarding family rituals. Participants came from variety of family structures including intact families, single-parent families, foster families, and so forth. The study found that positive family rituals (e.g., eating meals together) resulted in better social connections and a decrease in depressive symptoms. Researchers believe that adolescents' connections with their family members, as a result of rituals, lead to better relationships with others. Family rituals, thus, serve as protective factors.

2.3.3.3 Cohesion

Cohesion within a family can be described as the "togetherness" of family members and, more specifically, as the emotional bond that exists between members—as well as the degree of flexibility they allow one another with regard to roles, rules, and relationships (Botha, Wouters, & Booysen, 2018). Black and Lobo (2008) labelled healthy families as enjoying cohesion and managing adaption to ensure the best possible functioning of the family as a unit. Specifically, families who face their challenges together, supporting one another, and interacting cohesively are more likely to achieve their goals and experience improved opportunities (Benzies & Mychasiuk, 2009).

For example, Vermeulen and Greeff (2015) found that cohesion within the family resulted in a stronger sense of togetherness and support amongst members, ultimately promoting resilience. Walsh (1996) said that shared beliefs (such as family roles and social norms) within a family are necessary for collaboration and coherence that champion resilience. Similarly, in a study led in Afghanistan, Eggerman and Panter-Brick (2010) conducted interviews with 1,011 children between the ages of 11 and 16 years and their caregivers, on the topic of what causes and resolves stress in their lives. Results indicated that resilience stemmed from cultural values such as family unity, which was necessary for better mental health. However, results also indicated that cultural values, such as being unable to achieve certain cultural aspirations due to economic hardships (e.g., adolescents being forced to work to provide for their family), obstructed resilience in other ways. It is, thus, important to consider the role that culture plays in enabling or inhibiting resilience, through family cohesion.

In a study by Ozer, Lavi, Douglas, and Wolf (2017), 9,840 adolescents residing in Panama and Costa Rica, and who had been exposed to violence and the use of illegal substances in the community context, were considered. Ozer and colleges defined family cohesion as a setting in which family members come together as a unit, showing care for one another. They found that adolescents from families that showed greater cohesion were found to be less likely to engage in the use of substances, and that family cohesion serves as a protective factor—assisting adolescents to be resilient.

Likewise, in a study by Rawatlal, Kliewer, and Pillay (2015), 206 participants between the ages of 9 and 18 years, along with parent or caregiver were recruited from public schools in KwaZulu-Natal, South Africa. The study found that good family cohesion and support often resulted in a better parent–adolescent attachment, which resulted in adolescents experiencing decreased depressive symptoms and improved emotion regulation. On the other hand, decreased levels of family cohesion appeared to result in adolescents experiencing increased susceptibility to depressive symptoms. Based on the literature, family cohesion is usually a promotive factor for resilience, however, it is necessary to be aware of the cultural underpinnings adolescents and their families follow when attempting to understand their resilience.

2.4   CONCLUSION

In this chapter, I have summarised some of the multiple international, as well as South African studies, that explain the risks associated with the petrochemical industry. I also reviewed some ways in which families support resilience, specifically in adolescents affected by adversity. None of these studies, however, was specific to youth residing in an industrialised context, illustrating the importance of my study in helping to close this gap. With more information pertaining to championing resilience in this specific context, I and other educational psychologists will be able to better support individuals affected by the petrochemical industry. In the next chapter, I discuss the methodology that was used in my study.

3. CHAPTER THREE: METHODOLOGY

3.1 INTRODUCTION

In this chapter, I discuss my chosen paradigmatic perspective and research methodology. I explain my research design in more detail, discuss how participants were selected, my chosen method of data generation, and the analysis process used. Finally, I conclude the chapter with a discussion of the ethics principles employed in my research.

3.2 SITUATING MY STUDY OF LIMITED SCOPE IN THE RYSE STUDY

As I discussed in Chapter One, my study forms part of the larger study of RYSE. RYSE seeks to determine how the resilience of young people residing in stressed environments in South Africa and Canada is enabled through biological, psychological, and environmental factors (RYSE, n.d). I was in no way involved in the design of this study. In my role as a master's student and, therefore, a student researcher in this project, I was given the opportunity to select where I would want to focus my research [how families may facilitate resilience] in keeping with the general aim of the larger RYSE project, and was then requested to motivate my choice and decide on a suitable sub-study.

Because this was a collaborative research study, my fellow South African student researchers and I discussed and agreed on qualitative methods that were appropriate, and would assist in answering our research questions. Throughout these discussions, I reflected on my own research question to ensure that the methods, arts-based activities, and additional questions would assist me in generating data that might answer my research question.

A pre-selected community advisory panel recruited youth participants for our (we co-researchers) study. I was not involved in this initial selection of participants, however, I was directly involved with the selection and administering of all activities which occurred hereafter. My fellow student researchers and I then met and worked with the pre-selected participants on 26 August 2017. We co-researchers were then each assigned a group of participants with whom we worked on that day. Thereafter, we co-researchers were each responsible for transcribing our respective group's data and, after it being checked by our project manager, sharing this data.

The data generated by the groups other than my own, is referred to as secondary data (Johnston, 2017). This means that the data I used in my findings included primary data that I was directly involved with generating, as well as secondary data that my student co-researchers were involved with generating. I analysed and interpreted all the data in an attempt to answer my research question. I do not identify the analysis of the data or my study as a secondary data analysis in my report because the data generated on 26th August 2017 was not previously analysed.

3.3   PURPOSE OF STUDY

The purpose of this phenomenological study is to explore how the resilience of young people (aged 15 to 24 years) living in eMbalenhle (i.e., a community challenged by risks associated with the petrochemical industry) is facilitated by families. The current knowledge of how families facilitate resilience excludes the context of adolescents living in a community affected by the petrochemical community, therefore, there is value in this exploratory research. Exploratory research seeks to explore, based on the opinions and experiences of individuals, a specific problem or phenomenon with the aim of gaining a better understanding— rather than derive an answer or solution (Singh, 2007). My study, being of limited scope, seeks to understand the perceptions of youth participants, residing in a community affected by the petrochemical industry, with regard to how families champion the resilience of their adolescent children in this context.

3.4   PARADIGMATIC PERSPECTIVE

3.4.1   Epistemological Paradigm

Epistemology refers to the concept of knowing, acquiring knowledge through a variety of mediums, communicating knowledge (Hogain, 2018), understanding how it is that individuals know what they know (Antwi & Hamza, 2015), and whether this knowledge is satisfactory (Green, 2016). In my study of limited scope, I used an interpretivist paradigm to generating knowledge.

Interpretivism holds that individuals make sense of the world around them through their interactions with other individuals and subjective experiences within their own environments (Neuman, 2003), and that no single reality exists (Hogain, 2018).

Considering this, I can say that individuals socially construct their realities and that these are specific to the contexts in which these individuals exist (Green, 2016). Interpretivism, thus, means that rather than a single objective truth, individuals create many truths or realities—through language and mutual meanings. These realities are constructed through the subjective experiences of participants and consequently must be understood (via interaction and shared interpretations), rather than observed (Jansen, 2013).

One advantage of interpretivism is that it requires the researcher to become actively involved throughout the process of generating data (Hogain, 2018). Interpretivism requires a researcher to play an active role in the processes involved in research because multiple realities exist and, thus, research is a process of interaction between the researcher and participants, and understanding of participants' interpretations of an event (Imegi & Wali, 2017). The researcher's active role is an advantage because she or he is able to connect with participants to elicit rich personal information from participants who feel comfortable and safe (Newton, 2017). I found this to work well in my research because I was able to connect with participants on a personal level, creating a friendly environment in which participants felt safe to teach me about their experiences relating to their well-being and resilience—and, I was willing to listen and learn, showing genuine interest. Another advantage is that of contextuality (Hogain, 2018). Because data is interpretivist, attention is given to contextual factors such as the petrochemical industry, allowing for a complex, more accurate interpretation of data generated and, therefore, a better understanding of participants' responses (O'Mahony, 2017).

In contrast, one disadvantage of interpretivism is that data generation and the interpretation of the data are often time consuming (Aldiabat & Navenec, 2018). Because I also work as a teacher, time management was very important in order to allow myself enough time to focus on my research. I managed this by making use of a daily calendar, and scheduling set times to work on my research. I also met with my supervisor regularly, who negotiated and set dates for the submission of certain sections. Another disadvantage of this approach is that it cannot be generalised to other populations (O'Mahony, 2017) due to the specific context in which the research was done (i.e., a disadvantaged community affected by the petrochemical industry in South Africa). I attempted to manage this limitation by ensuring accurate

and specific descriptions of the context were provided in order to ensure that transferability judgements be made regarding whether the findings of this research project could be applicable to other contexts, populations, or times.

3.4.2   Methodological Paradigm

I elected to implement a qualitative research paradigm. Qualitative research requires a personal and direct relationship between researcher and participants, focusing on participants' experiences and understanding, and aiding the study with its richness (Antwi & Hamza, 2015; Tuli, 2010). Knowledge is, therefore, constructed by the interaction between the researcher and participants, which fits with my metatheoretical approach: interpretivism. Research methods employed in qualitative research often include group discussions and arts-based activities (Neuman, 2003). Researchers using qualitative research focus on the interactions of participants and the context within which they generate data, which in this study, referred to the disadvantaged community of eMbalenhle in the Secunda region of Mpumalanga, South Africa. Thus, using qualitative research allowed me to focus specifically on how families support the resilience of youth in a context exposed to the risks associated with the petrochemical industry. In this way, my research displayed contextual sensitivity (Antwi & Hamza, 2015).

An advantage of using a qualitative research paradigm is that data generated may contribute to a better understanding of the research focus (in my study of limited scope, this was the ways in which families support youth to be resilient), allowing for in-depth understanding and description of details (Idowu, 2017) based on personal narratives and visual representations. Because experiences are detailed and context specific, data generated can be used to gain a more accurate understanding of a particular phenomenon (Idowu, 2017). Furthermore, qualitative research uses interactive methods (Ritchie, 2003). In the RYSE study, group activities and related discussions were used to facilitate conversations, and to promote sharing of experiences by participants with individuals who were experiencing the same phenomenon. In my group, this method worked well because participants often agreed with one another and added to one another's stories, creating richer data. This method helped me to better understand participants'

experiences because, in instances where one participant had difficulty explaining, another was able to clarify these for me.

A disadvantage of using a qualitative paradigm, however, is the cost involved (Idowu, 2017). Costs of setting up meetings, training researchers on how to conduct interviews, and reimbursing participants are higher. In our study, specifically, the cost of travelling was high due to the distance to eMbalenhle. Every participant was also reimbursed for travelling to the research site in eMbalenhle, and was provided with food and beverages for the day. Participants also received gift vouchers from a local grocery store as a token of the researchers' appreciation for their contributions to the generation of research. These vouchers were however not discussed with participants prior to the commencing of research activities, but rather presented at the end of the day as a way of thanking participants for their time.

3.5 METHODOLOGY

3.5.1 Research Design

My research has followed a phenomenological design. Phenomenological designs are most often used in qualitative studies, and focus on how individuals perceive and understand, in a subjective manner, a particular phenomenon in their specific contexts or social realities (Creswell, Hanson, Clark Plano, & Morales, 2007). This form of design requires a study of a small sample of participants to reflect on their knowledge and perceptions of a particular phenomenon (Givropoulou & Tseliou, 2018), allowing participants to share their lived experiences with the researcher in the participants' everyday environment (Gahnström-Strandqvist, Liukko, & Tham, 2003). Following O'Neill, McCaughan, Semple, and Ryan (2018), in my study, this design did not attempt to create a general explanation but, rather, a deeper consideration of how a group of adolescents living in a petrochemical-dependant location explain how families support adolescent resilience. The aim of the phenomenological researcher is thus to authentically understand a particular phenomenon, and to correlate this with what is understood from other's experiences of the same phenomenon (Flynn & Korcuska, 2018).

The advantage of using a phenomenology is that it respects indigenous knowledge given that its focus remains on the subjective experiences of individuals (Seabi,

2012). This was true in my study. I was interested in the experiences and perspectives of adolescents living in an area affected by the petrochemical industry (i.e., adolescents living in eMbalenhle). Another advantage of a phenomenological design is that it requires fewer participants (Ngulube & Ngulube, 2017). In the RYSE project, the total number of participants for the qualitative work conducted in August 2017 was only 30. These 30 participants were divided into four smaller groups, allowing sufficient time to discuss individuals' experiences related to living in a disadvantaged area affected by the petrochemical industry, as well as what these adolescents believed promoted resilience. This was an effective method in gathering information centred on real-life experiences, and in helping to guide my own understanding.

One possible limitation of a phenomenological design is the researcher her- or himself (Wilson, 2015). Given that I am accustomed to a different life context, and come from a privileged background, my subjective experiences and understandings may lead to potential bias, which in turn, may affect my understanding of information gathered from participants. It is thus important to be aware of these biases and to guard against them affecting my interpretation of stories. One way in which I guarded against this [bias] was to ask participants to clarify what they had said when I was unsure of the meaning. Another was to declare my assumptions about families and resilience upfront. I come from a family of four that has little contact with extended family members, making my understanding of the structure of a family potentially different from those of other South African cultures. My own family is also very supportive and, thus, I might expect other families to act in the same way.

Another limitation to using a phenomenological study is the extent to which the researcher might become involved with participants, experiencing an emotional connection with participants based on their experiences or, perhaps, feeling accountable (Ngulube & Ngulube, 2017). As the researcher, although I was committed to listening to participants' stories and asking about experiences in order to generate useful data, I was able to stay true to my role as researcher—focusing on the importance of what experiences and understandings might mean for future understandings of resilience. Also, a limited amount of time (i.e., only one Saturday) was spent with participants, limiting my involvement with my group. Furthermore, the accounts that were shared in my group were full of factual information from which

I could learn about the community, realise possible themes, and learn from participants how families support resilience.

3.5.2   Participants

As mentioned previously, I am a part of the greater RYSE project and, therefore, was not responsible for recruiting participants. Participants were selected by a predetermined community advisory panel in collaboration with members from the RYSE research team. The community advisory panel made use of flyers (see Addendum A) to purposefully recruit participants who would be relevant to our research. It was necessary for the RYSE research team to advise the panel on how many participants were needed in order to achieve rich data and, later, data saturation. However, participation was voluntary and resulted in fewer participants than had been planned for, attending research activities. Data saturation refers to the point of data generation or analysis where no new ideas or themes arise (Glenton et al., 2018). Because there was no way for me to ascertain if data saturation was reached, it was agreed upon by the research team that we may need to return for further research in order to achieve data saturation. However, during data analysis, it was found that data saturation had been reached and there was thus no need to return for further research.

It is considered more effective to purposefully select participants (especially in a phenomenological study) according to a specific criterion relating to a study in order to ensure that the data generated would be useful (Maree, 2007). Participants were selected according to strict criteria. The first criterion related to location, stipulating that participants had to be residents of the community of eMbalenhle—located approximately 12 kilometres from Secunda due to its dependence on the petrochemical industry and the associated risks. The second criterion for participants was that they be between the ages of 15 and 24 years.

In my study, I used data from 30 participants. There were 15 young women and 15 young men. Participants were between the ages of 15 and 24 years, with the average participant age being 19.1 years. Most participants spoke isiZulu as their home language. At the time my fellow RYSE researchers and I worked with them, 12 participants attended school or were studying. Only four of the older participants were employed at the time.

Because of my chosen research method, I was required to interact directly with participants, building rapport and creating a safe environment in which participants could share their experiences. Research took place in eMbalenhle, where the participants live. eMbalenhle is a township located adjacent to the Sasol plant near Secunda (van Niekerk, 2017). eMbalenhle had a population of 118,889 people in the 2011 census, of whom 99.04% were black Africans suffering from high rates of unemployment (Rathebe, 2018). On the arrival of participants, the first challenge my co-researchers and I faced was the language barrier. Although language proficiency was a prerequisite when participants were recruited, some participants still had difficulty speaking English and, socially especially, chose to speak in other languages. During the 2011 Census (Census 2011, n.d.) it was found that 49.82% of the population spoke isiZulu and a much smaller 2.09%, spoke English. One advantage of working in a group was that a member of the advisory panel (as explained above) was able to speak isiZulu and could assist me in understanding participants.

The advisory panel members were requested to sign declarations before research commenced, in which they agreed to maintain confidentiality. Furthermore, these translations were kept to a minimum during activities and were used rather, to facilitate discussions, in which I was able to clarify my understanding of what was being said. This enabled me to be involved in discussions rather than to rely on translations themselves.

On arrival, it appeared that eMbalenhle lacked suitable infrastructure such as adequate housing and shopping centres. A number of informal houses were erected along the sides of the main road, and informal stalls were erected in the town (see Figure 3.1.). There were also excessive amounts of litter in the roads and along the sidewalks.

Figure 3.1: Informal housing erected along the main roads of eMbalenhle (photo courtesy of the RYSE project manager)

3.6   DATA GENERATION

Amongst other arts-based activities, my three fellow RYSE researchers and I elected to make use of body mapping and draw-write-talk. I focus on these two activities because I was able to generate the richest data from these activities, whereas the other activities yielded less useful information pertaining to how families enable the resilience of youth. My co-researchers and I used these activities with groups of participants (we each facilitated one group). The community advisory panel had advised us to make use of members of the local community (who speak isiZulu) as group facilitators to assist each group and researcher to better understand one another. These facilitators assisted us in a number of ways such as handling voice recorders, photographing the visual artefacts, and helping participants to translate phrases and sayings unique to their home language.

3.6.1   BODY MAPPING

Body mapping is a visual or artistic research method that requires participants to narrate their experiences by tracing their bodies and then representing aspects of their life (usually with a focus on a specific research question or direction) onto their

traced body (Lys et al., 2018). It is seen as an effective nonverbal method of data generation that provides participants with a safe environment in which they may consider personal, emotional, and cultural components of their lives and, in so doing, produce good data in terms of personal experience (Maina, Sutankayo, Chorney, & Caine, 2014).

In the RYSE research, body mapping was done as the first activity, after the icebreaker, in an attempt to understand how participants experience the petrochemical industry and, in specific, how participants believed the petrochemical industry affected their mind, body, and heart.

The following was explained at the start of the activity:

> We are going to use this paper so that you can each tell a story of how your whole body, head, and heart feels and thinks about the petrochemical industry, and how the petrochemical industry affects your well-being. It will be like a life-sized photograph that you make of yourself.
>
> After this, we each decorate and write our own body maps. Then we take turns to tell the story of our own body maps to the facilitator who will take photographs of the body maps, take notes while you tell your story, and audio record you as you tell your story. The map remains your property, and you may take it with you at the end of today's time together. The story of your body map is about how the petrochemical industry affects your well-being and, especially, how it affects your well-being (i) in your body, (ii) in your mind, and (iii) in your heart.

To begin the activity, participants were asked to choose a partner to assist them in tracing their body onto a large piece of paper. Female participants elected to trace fellow female participants, while male participates elected to trace other male participates. Once participants had had their bodies traced, they were asked to provide details (such as drawings or words) to their drawings that might explain the risks she or he experienced as a result of residing in a community affected by the petrochemical industry, as well as which supports enabled them to be resilient in such a context.

This worked well as the first activity because participants were required to think about how they were affected by this context, as well as in which ways they showed resilience despite risks. Once participants had completed their drawings and reflected (see Figure 3.2), they were asked to share their experiences as a group. This worked very well because participants would clarify or elaborate on one another's answers, facilitating discussion.

Figure 3.2: Participant engaging in body mapping activity

3.6.2 Draw-Write-Talk

The draw-write-talk method was formulated to improve on the existing method of draw-and-write, in order to improve researchers' interpretation of data and to provide clarity on the stories and experiences of participants (Angell, Alexander, & Hunt, 2015; Lunn Brownlee, Curtis, Spooner-Lane, & Feucht, 2017). This method is especially effective when used with participants who enjoy art-centred tasks, and who may have difficulty verbalising their thoughts—potentially due to a difference in the first languages of researcher and participant (Water, Wrapson, Tokolahi, Payam, & Reay, 2017). This was particularly useful in my study because my language was different to that of the participants.

In my research, participants were given a sheet of paper with the relevant question on top, and asked to first daw a picture using the coloured crayons, pencils, and pens available (see Figure 3.3) and, once done, to turn over the page and write a few sentences explaining what they had drawn (see Figure 3.4). Once participants had all concluded their drawings, the drawings were shown and discussed in a group setting.

The following question was printed on the front of the paper: "What/ who makes it possible for young people to be OK when the petrochemical industry affects their life in a negative way?" The question was purposefully broad (i.e., it did not ask about family specifically) so as not to bias participant responses.

Figure 3.3: A participant's drawing answering the question of who/what makes it possible for him to do OK

Figure 3.4: The same participant's written response to the question of who/what makes it possible for him to do OK

3.7   DATA ANALYSIS

The data generated in this study took the form of drawings, written descriptions, and verbal discussions. The arts-based activities used in generating data were activities that facilitated discussions regarding the experiences of participants relating to the risks they experience as a result of the petrochemical industry, as well as how resilience was enabled by families. These activities avoided limiting responses to questions by allowing for creativity and reflections, based on participants' creative products. These methods allowed participants' responses to be culturally and contextually specific.

When reviewing the data, I transcribed the verbal audio files verbatim, and then proceeded to analyse all visual data. My co-researchers and I each transcribed our own group's data, and these transcriptions were checked by the project manager and then shared electronically, in a manner that preserved the rights of participants, in order for each researcher to have a complete set of data. The project manager, the group members (including we co-researchers), and our supervisor worked together to set reasonable due dates, allowing the team enough time to analyse the data generated.

For my study, I elected to use inductive thematic data analysis. Inductive thematic analysis is a qualitative method used to systematically identify common patterns in the data that answer the research question (Braun & Clarke, 2012). The research paradigm I elected to use was an interpretivist one, meaning data was generated from the personal experiences of participants and I, in turn, interpreted their interpretations of how families support the resilience of adolescents growing up in eMbalenhle. Inductive analysis was a good fit for this data analysis as it meant data was carefully reviewed to establish patterns in participants' responses to the research question, rather than using codes that are based on reviewing the literature pertaining to the specific topic of research and deducing conclusions based on these—rather than on participants' experiences.

Thematic analysis is done through studying the data generated and identifying patterns. Thematic analysis is used effectively when attempting to understand experiences or opinions (Braun & Clarke, 2006), which are suitable to my research because I wanted to understand how adolescents believe families champion resilience in the disadvantaged context of a petrochemical industry. By using this form of analysis, I was able to work in an organised manner, identifying themes as they emerged.

A challenge I encountered was managing my time. Because transcriptions were divided into four groups (each researcher transcribed the data from the group she or he facilitated), this helped to lessen the time spent transcribing. However, I still had to become familiar with the total data set (my transcription and those of the other three groups). Strict timelines were agreed upon during meetings, which

helped me to manage deadlines. I also made use of a personal schedule in which I noted dates for drafts of the emerging themes as well as the final themes.

As noted earlier, I elected to make use of thematic analysis and, in particular, Braun and Clarke's (2006) six phases of thematic analysis. I began the inductive thematic analysis by immersing myself in the data—by reading and rereading the transcripts—and becoming familiar with it. I also studied the photographs of the body maps, the scans of the drawings, and participants' explanations of the drawings. First, because of my focus on families and how families support adolescents to be resilient, I identified the parts of the data that included information about my study's focus. Following Braun and Clarke's (2006) guidelines, I then used open coding for information that related directly to my research question. This means I provided a label for this information. The label summarised what that piece of data was saying about how families supported the resilience of adolescents (see Addendum B).

Once I had completed open coding and all relevant sections had been assigned a suitable label, I began to group recurring codes (labels) and similar codes, colour coding them as I worked, and renamed these groups with possible theme names that summarised what all these codes had in common. These larger groups are termed axial codes or candidate themes (Case, Starkey, Jones, Barker-Collo, & Feigin, 2017). Once these groups had been established, I documented their inclusion and exclusion criteria (see Addendum C) so that other individuals could understand how I had coded the data.

When patterns in the data, or themes, had been identified, I checked them and refined them as necessary. Because bias may have been a challenge in the interpretation of my data, I remained alert and reviewed data multiple times. This process is one that is unique to each researcher, done carefully in order to prevent possible bias (Gibson, 2017). One advantage of working as part of the larger RYSE group was that I was able to reflect on my interpretations with my fellow students, who made me aware of any bias or misinterpretations that arose in my preliminary findings. Themes were reviewed in a group setting in which my fellow researchers and I had to present our themes, and justify how we had established them. Theme names were revisited, and we co-researchers discussed what each theme should include in order to ensure it was relevant to our study. In other words, how I named

and defined my themes was verified by the RYSE team. Following Braun and Clarke's (2006) final phase, I wrote up the themes as the findings of my study (i.e., the themes that provided an answer that was relevant to my research question) and showed satisfactory evidence of my themes.

Due to the nature of my chosen research approach, generalisability of the themes was a challenge (Tuli, 2010). Because qualitative data is focused on a particular sample of people and their understandings, it lacks generalisability beyond the sample group of participants (Antwi & Hamza, 2015). However, I am not interested in generalising the findings of my research because I am specifically interested in whether the adolescents residing in eMbalenhle, affected by the petrochemical industry, perceive families to champion resilience and, if so, in what way families do this.

3.8   TRUSTWORTHINESS

According to Guba and Lincoln (1994), there are five important aspects that must be considered when interpreting data: credibility, confirmability, dependability, authenticity, and transferability.

Credibility refers to the trustworthiness of the questions the researcher uses in terms of the methods used, and whether these methods and processes of data generation can be justified by the rationale of the study (Guba & Lincoln, 1985). To increase credibility, we (the RYSE team) chose methods that had been proven to work based on previous studies done with black South African youths (Ebersöhn et al., 2012; Ebersöhn, Eloff, & Swanepoel-Opper, 2010; Mayaba & Wood, 2015; Theron, 2016b). Credibility was ensured by our undergoing training before research with participants began. This training involved our project manager teaching us which questions to ask, and in which order, and how to work our probes or clarify when we did not understand. This meant that each researcher followed specific guidelines when administering materials, and avoided biasing participants' responses. Credibility was further ensured by making use of two voice recorders (one that stayed with the researcher, and one that was passed along while participants spoke) to document exactly what participants discussed. These recordings were then used to write up the transcriptions of each group, which was done verbatim. Transcriptions were then sent to the project manager, who methodically checked

these before sending the transcriptions from all four groups back to the researchers. Once each researcher had analysed her or his data, we met as a team with our supervisor and employed peer checking to avoid any bias. It should also be noted that findings were discussed by lead researchers from the RYSE team, with the community advisory panel, as a method of member checking, optimising credibility (Morse, 2015). Participants' opinions were heard with respect and not questioned, ensuring a safe environment in which to share.

Confirmability refers to whether results of a study can be confirmed, if reviewed at a later stage or by another researcher. This process involves careful fact confirmation to ensure that the findings and interpretations of the researchers can be confirmed through the checking of raw data, notes, transcripts, coding process notes, and so on (Zhang & Wildemuth, 2016). In my study, I employed triangulation by making use of a number of methods aimed at generating data, based on the participation of 30 participants, and combining these findings to ensure trustworthiness was realised, and bias avoided (Kern, 2018). I have also included an audit trail of my research (see Addendum B), showing where findings were derived from (Shenton, 2004).

Dependability refers to the stability of data in changing conditions or through time. This could be tested when a similar study is conducted, in a similar context, to measure the same aspects measured in this study, and noting whether the same or similar results are achieved. To ensure dependability, I made use of a notepad to track all my research processes including scheduled group meetings, in which processes were reflected on. I also included an audit trail (Addendum B), in which my data analysis process can be reviewed. Although this study is not based on a previous study, a similar study is being conducted in Canada. This will be interesting because it will allow me to compare how similar studies, in the context of a petrochemical-affected community, and based on adolescents, will compare to a study conducted in a South African context. Because a cooperative relationship exists between the South African and Canadian RYSE research teams, the trustworthiness of findings could be ensured when external audits occur—due to the continual collaboration of both research teams (Billups, 2014).

Transferability refers to how well data generated in one setting could be applied to another setting. It is not the researcher's responsibility to ensure transferability, it is only necessary for the researcher to provide as much descriptive data as possible for her or his study (Zhang & Wildemuth, 2016). To show transferability in my study, I described participants in terms of age, ethnicity, and employment, as well as the context of my research (see Section 3.5.2.).

Authenticity refers to how individuals understand "truth" and how interpretations are established and evolve through learning, and change over time (Johnson & Rasulova, 2017). Authenticity has five elements, namely, fairness, ontological, educative, catalytic, and tactical authenticity. The first element, fairness, involves the way in which the researcher balances the, potentially conflicting, values and understandings of contextual truths of participants. The second element, ontological authenticity, refers to the way in which participants' own understanding potentially evolves as a result of their participation in the research process. The third element, educative authenticity, concerns the changed appreciation participants gain for the worldview or opinion of others. The fourth element, catalytic authenticity, is seen as the way in which these changes in understandings facilitate new actions and behaviours. The fifth and final element, tactical authenticity, refers to the degree to which participants are empowered to take action (McLaughlin, 2001). I ensured authenticity by engaging in continual self-reflection, in which I reviewed my findings and interpretations in order to avoid favouring one participant's view over another's. I also met regularly with my co-researchers and supervisor to discuss interpretations—confirming valid interpretations were made and particular deductions were not made using information from one source, while ignoring information from others. These scheduled meetings also encouraged critical thinking, in which I would question whether what I had found was an accurate representation of participants' responses, or whether I unintentionally steered the results in a direction of my choosing.

3.9 ETHICS

I am part of the greater project of RYSE, which received ethical clearance from the University of Pretoria (reference number UP 17/05/01, Addendum E). I was not involved in the initial consent process, however, this process followed the ethical

guidelines as stipulated by the university, and used approved information and consent letters (see Addendum D).

Activities were conducted in groups, which might be seen as an ethical risk in terms of confidentiality. I guarded against this by inviting participants to use pseudonyms (Chen, Chen, Lo, & Yang, 2008) during discussions, and referring to participants by their pseudonyms during transcription and data analysis procedures. Participants were informed about the process of working in groups, and that information would be shared amongst the group members involved in the RYSE project, however, participants were also assured that information would be treated with respect and that, as far as possible, their identities would be protected. Because I was working as part of a team, my co-researchers and I agreed to share raw data, allowing for a more comprehensive study (Lindsay, 2017), however, each of us focused on a different aspect of resilience for our individual studies. The sharing of information was done in a manner that protects participants as well as their information to ensure no harm was done. The overall risk was low because sensitive information was not invited (e.g., I did not ask about risks in families or how families cause or worsen risk), avoiding the possibility of harm (Joel, Eastwick, & Finkel, 2018).

In keeping with my ethical responsibilities, I endeavoured at all times to conduct myself in a professional manner (Wilson, Kenny, & Dickson-Swift, 2018). I reminded participants about the purpose of our research, the possible risks (e.g., that group work meant others in the group would know what each participant said), as well as the possible benefits involved in their participation in the project. I personally ensured that every participant had signed an informed consent form before activities began (Wilson et al., 2018).

Every effort was made on my part to be contextually sensitive and respectful, accepting participants' context as diverse from my own and not imposing my own contextual norms on them (Medin, Ojalehto, Marin, & Bang, 2017). Contextual differences arouse in our discussions often as participants explained their daily routines (e.g., social events being centred on the Sasol hall). During my research, I was aware of, and regularly reflected on, my positioning as a white woman from a privileged background and with a higher education. This had the potential to affect my research (Jeanes, 2017) because I could not fully understand the context

participants were in, or how their daily routines differed from my own. However, this was managed by having discussions with the community advisory panel member who helped facilitate my group, as well as with participants about their experiences, from which I was able to better understand and learn about this unfamiliar context. Participants' rights were respected, allowing adequate breaks in order to avoid exhaustion.

I was also aware of my own competencies in order to not start an activity in which I had not been trained. My fellow researchers and I received training from our project manager before commencing with research in eMbalenhle. Training consisted of discussions where the project manager prepared us regarding what to expect, based on previous visits and discussions with the community advisory panel. We were trained on which activities we would be carrying out with participants, the method of administering each activity, how questions should be asked, and how to clarify. We co-researchers also received training on how to use our recorders and tablets, which would be used to photograph the research process.

3.10   CONCLUSION

In this chapter, I discussed the research paradigmatic perspective, methodology, and design that was used in my study, and detailed why I elected to use each method. These methods have assisted me in achieving meaningful findings that will be discussed in the next chapter.

4. CHAPTER FOUR: REPORTING RESULTS

4.1 INTRODUCTION

In Chapter Three, I discussed the research methodology and design that was selected in order to answer the research question in my study of limited scope. In this chapter, I seek to answer the primary research question: "How do families facilitate the resilience of young people residing in communities challenged by risks associated with the petrochemical industry?" Three themes emerged (as shown in Figure 4.1).
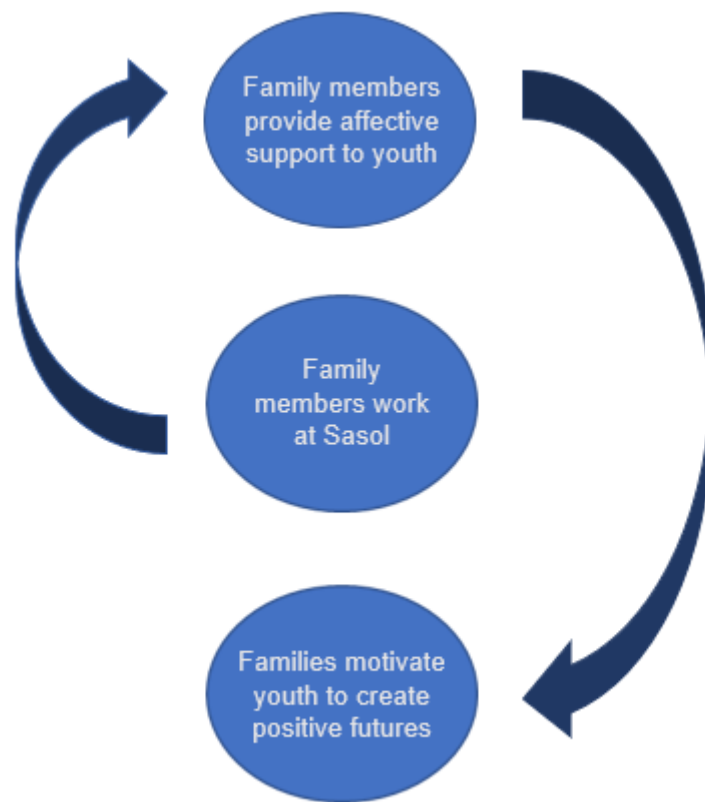
Figure 4.1: Visual summary of identified themes

There is no hierarchical relationship between the themes. All themes support the young people living in a community that is affected by the petrochemical industry to be resilient. Below, I discuss each theme individually, provide evidence from participants, and, finally, link these results to literature studied in Chapter Two. Before detailing each theme, I must state that in the course of explaining their resilience, the participants in all four groups referred to the petrochemical-dependent community in which they lived as being full of risks. The risks discussed

by participants have linked well with those risks discussed in Chapter Two (Section 2.2). This included the risk of air pollution that affected residents' physical health. For example, Danny from Group 1 said:

> He [man in his body mapping drawing] had good lungs before the industry arrived, then he started to have the problem of lungs. Then he started having a problem with breathing. From then he had asthma.

Similarly, MJ from Group 4 said:

> I find it hard to breathe sometimes . . . there is a lot of pollution here from Sasol.

Participants also mentioned other health risks, such as red eyes or nose bleeds, that are associated with pollution. For example, Fikile from Group 1 said:

> Sometimes I breathe heavy, I have a runny nose, I bleed every morning, I bleed because of the air that we inhale, it is polluted.

Likewise, Siya, from Group 4 said:

> I have problems seeing in class. Yeah. My vision just gets blurry for no reason. It gets blurry for, like, 5 minutes and then it goes back to normal. Yeah, sometimes I don't even finish the work in class, so it [pollution] affects me in school too.

Participants went on to explain that opportunities to study and seek employment are limited because community members are expected to study and work for Sasol, accepting employment opportunities at Sasol, rather than in other fields or industries. This experienced risk was not discussed in Chapter Two due to Chapter Two's specific focus on only three most commonly identified risks associated with the petrochemical industry. As Zenande from Group 1 said:

> It [Sasol] affects us negatively, um, because everyone is only stuck on being an engineer or an artisan. . . . It [Sasol] only tells people that you should come work for us, we will do this for you and this.

However, there are not always jobs available to community members and, as a result, poverty is another risk associated with the petrochemical industry. Khotza, a participant from Group 2, explained:

> You find that at home there is poverty you see, they try to help out at home like when there are young children at the home and they depend on you and you are still studying as well. You have to go and hussle and some to survive.

Similarly, Gugu, a participant from the same group said:

> But I am not getting what I want . . . we have the little things that we have, but we
> are not happy, nobody is happy. We are surviving by saying that we live here.

The risks discussed above are only examples of those experiences in the petrochemical-dependent community of eMbalenhle, and are discussed briefly because the focus of my study was not the risks of residing in a community affected by the petrochemical industry but, rather, on how families championed the resilience of young people affected by these risks. It is evident in my findings that families play a substantial role in championing the resilience of those adolescents residing in eMbalenhle. The themes discussed below serve to group the overarching findings that were identified in the data.

4.2   THEME 1: FAMILY MEMBERS WORK AT SASOL

For adolescents who are affected by chronic physical discomfort or poor health due to pollution, families provide financial assistance aimed at meeting adolescents' basic needs. Three groups in this study (Groups 1, 2, and 3), reported that family employment at Sasol assisted adolescents to be resilient by providing for their basic needs. Across these groups, family members included a mother, father, siblings, and, in one case, a grandfather.

For example, MJ, a participant from Group 3, explained that his parents depended on their employment at Sasol to have the capital required to cater for the needs of their children. MJ said:

> Life becomes easier because they [Sasol] opened job opportunities, you know,
> for them to go and work. If there is no work, they won't be able to pay for our
> schools and stuff, you know—our needs. Sasol employing our parents.

Similarly, Zenande, a participant from Group 1, explained that Sasol assisted families in his community financially, saying,

> It [Sasol] affected my community positively because everyone has been able to
> take care of their family. . . . In terms of finances. Money.
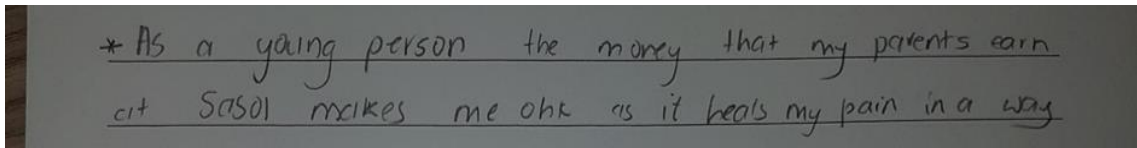
Parental or family employment had benefits for many of the youth participants in my study of limited scope. For example, Blessed, a participant from Group 1, spoke of her basic needs being provided through the employment of her family members at Sasol. She said:

> I have food, I have shelter, I have clothes, because my parents or my brother, they work at Sasol, they are able to provide all of those things for me, because of Sasol.

Likewise, another participant, from Group 1, as well as one from Group 3 attributed the provision of their basic needs to the fact that their family obtained job opportunities from Sasol. For example, Zenande from Group 1 said,

> My family helps. It does help because most of my family members are working at Sasol and I see the good that Sasol brings to them. It created jobs for them, it helps them support their family, my family.

As one participant explained his drawing (under the heading, "What/who makes it possible for young people to be OK when the petrochemical industry affects their life in a negative way?"), Khutso from Group 2 wrote that the money earned by his parents, who work at Sasol, enables him to be resilient (see Figure 4.2).

Figure 4.2: Khutso's written response to what/who makes him OK

In the same way, Lelo from Group 3 wrote that her parents' employment at Sasol allowed them to provide for her needs, saying:

> Even though Sasol does affect us in a negative way, it does provide job opportunities for our parents. In order to provide for the needs that we have.

Furthermore, Luyanda, a participant from Group 3 wrote that his parents made it possible for him to be resilient because they are able to provide for his family (see Figure 4.3). Luyanda said:

> So they [family members] spend most of their time trying to make money, trying to make a living.

> *What/who makes it possible for young people to be OK when the petrochemical industry affects their life in a negative way? (Remember we are interested in what you draw and not how well you draw)*
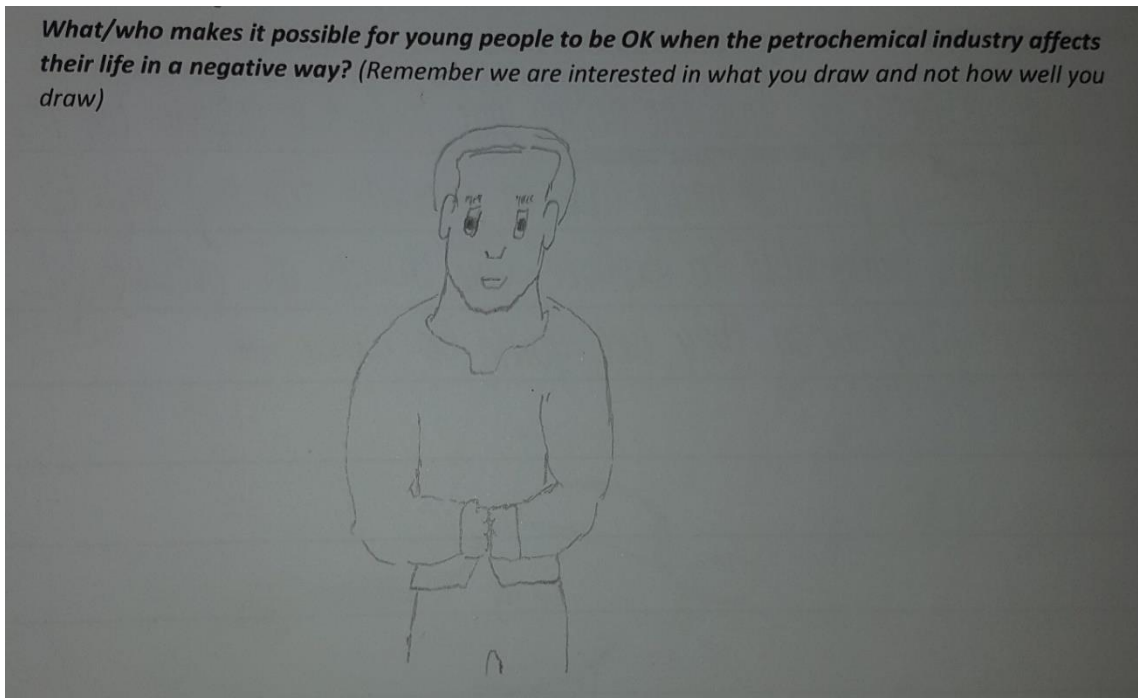
My drawing is based on that the person that make's it possible for me to be owk are my parents *with the petrochemical industry* being able to provide for my family and also them being able to explore *new* you things as getting to travell everyday when they are going to work or

Figure 4.3: Luyanda's drawing and written explanation of what/who helps him to do OK

Finally, in response to the question of what/who helps him to be resilient, Philasande, a participant from Group 3, wrote that his parents get paid by Sasol (see Figure 4.4).

The Petrochemical Industry may affect us negatively but at the end it pays our parents. The first picture shows someone who just got

Figure 4.4: Philasande's written answer to what/who helps him to be OK

This theme of family members working at Sasol aligns well with current resilience literature that consistently reports that parental income or economic stability is important for the resilience of young people. Both South African studies (e.g., Bachman DeSiva et al., 2012; Deaton & Paxson, 1998; Goodman, 1999; Greeff & Loubser, 2008; Vermeulen & Greeff, 2015) as well as international studies (e.g.,

McDonald et al., 2019; Pedersen & Madsen, 2002; Walsh, 2016) have reported the benefits for resilience when families can support young people's basic needs. In Chapter Two, literature also indicated that a lack of economic stability was associated with increased levels of stress and constrained resilience (Conger et al., 1994). In this study of limited scope, discussions have indicated that resilience is better facilitated when families are able to provide for the basic needs of adolescents affected by the risks associated with the petrochemical industry. My study thus supports previous findings which have shown that the provision of basic needs can enable young people to be resilient despite them being negatively affected by industrialization.

However, in my findings, participants attributed the source of economic stability and provision of basic needs to only one source, namely, Sasol. It was interesting that, in all the above responses by participants, Sasol was responsible for providing adolescents' family members with jobs, which in turn, enabled these family members to provide for the basic needs of their children or other family members. None of the studies (Bachman DeSilva et al., 2012; Collishaw et al., 2016; Dass-Brailsford, 2005; Jeon, Buettner, & Hur, 2014; Petersen et al., 2010) discussed in Chapter Two have attributed economic stability, and the associated resilience, to one particular source (e.g., a specific company). One possible explanation for the lack of literature attributing economic stability to a single source might be due to an absence of studies conducted in communities that are primarily dependent on a particular industry such as the petrochemical industry (i.e., Sasol) in eMbalenhle. Furthermore, studies that have been carried out in communities dependant on a specific source may not have focused specifically on families, or how the provision of basic needs might have affected the resilience of family members. Alternatively, because resilience is contextually specific, the findings in my study may be unique to the specific research site (eMbalenhle) of my study of limited scope and, thus, differ from the findings of previous studies.

Given that I was unable to find literature that could explain my findings of financial stability being attributed to only one source, I begin to speculate that eMbalenhle may be a town that has grown as a result of the development of Sasol. Because so many members of eMbalenhle are employed by Sasol, or seek future employment opportunities at Sasol, I believe that this community (i.e. eMbalenhle) depends on

Sasol for its economic status. It is possible that other industries play a similar role in other countries. On the other hand, given the small number of adolescents who participated in my study of limited scope, it is possible that those adolescents believing otherwise were unintentionally omitted from my study.

4.3 THEME 2: FAMILY MEMBERS PROVIDE AFFECTIVE SUPPORT TO YOUTH

Emotional support is a necessary ingredient for healthy relationships, and refers to the empathy, care, love, and trust shown to others (Kyngäs, 2004) as well as the affective support shown by family members to vulnerable youths (van Breda & Theron, 2018). For the purposes of this theme, affective support will be divided into two sub-sections, namely, families provide love and attention, and families provide advice and guidance. Although advice is not usually included in the discussion of affective support, research indicates that guidance or advice provided by caregivers may lead to feelings of being better emotionally supported (van Oerle, Mahr, & Lievens, 2016), and affective support (e.g., love), in turn, influences what advice is provided and how this affects the individual and potential outcome (MacGeorge, Guntzviller, Hanasono, & Feng, 2016). For this reason, I have included advice in the theme of families providing affective support to youth. Affective support, thus, will include love, attention, and advice provided by family members. Participants from all four groups in this study reported that emotional support from their family helped them to be resilient.

4.3.1 Families Provide Love and Attention

It has been established that families who provide love and attention enable resilience in other family members (Deist & Greeff, 2014). Responses by participants in my study confirmed that love serves to champion their resilience. For example, one participant, Sammy from Group 1 drew himself surrounded by love, time, and attention (See Figure 4.5), and wrote that his family helped him to be resilient by giving him love and attention (See Figure 4.6).
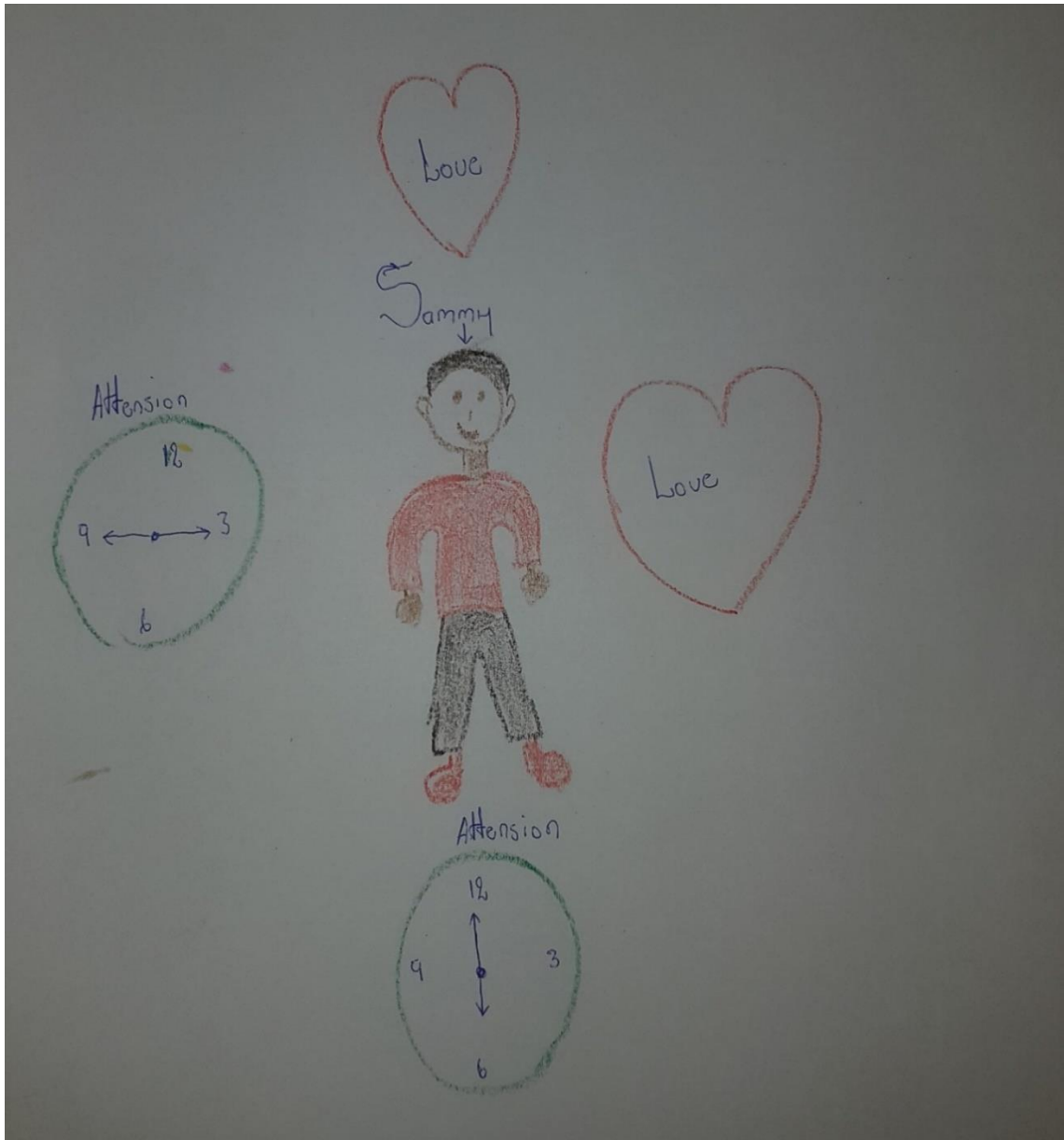
Figure 4.5: Sammy's drawing of what/who helps him to be OK

Figure 4.6: Sammy's written explanation of what/who helps him to be OK
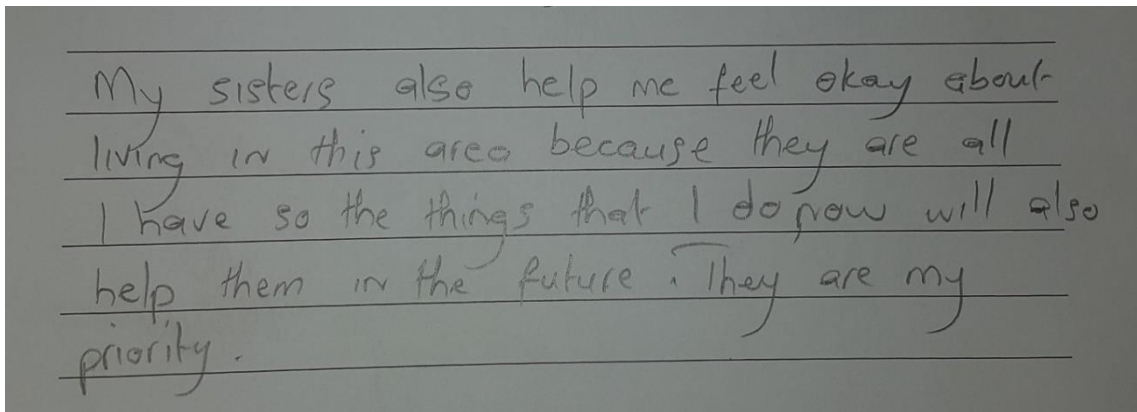
Likewise, two participants from Group 4, Tshepo and Quphza, highlighted that attention from their families, in the form of having someone to talk to, helped them to be resilient despite a negative environment. Quphza went on to explain:

I have people to talk to about my situation. Yeah, so I have my family.

Similarly, Andy from Group 2 expressed that his sisters enabled him to be resilient. He said,

Like, what makes it OK are my sisters, they are like my everything to me.

Because of this strong emotional bond with his sisters, he was willing to work hard for a better future. This is further supported by his written piece in response to the question of what/who helps him to be resilient, (see Figure 4.7).

Figure 4.7: Andy's written response to what/who helps him to be OK

Another participant, Carol, from Group 4 attributed her resilience to her family, saying that her family was the reason for her happiness and that being around them helped:

My family—family gatherings. Yeah, just being with them.

She explained that she is surrounded by the love of her family and is, therefore, happy in Secunda despite the risks she experiences. She explained her drawing (See Figure 4.8):

The heart symbolises the love I have around this place.
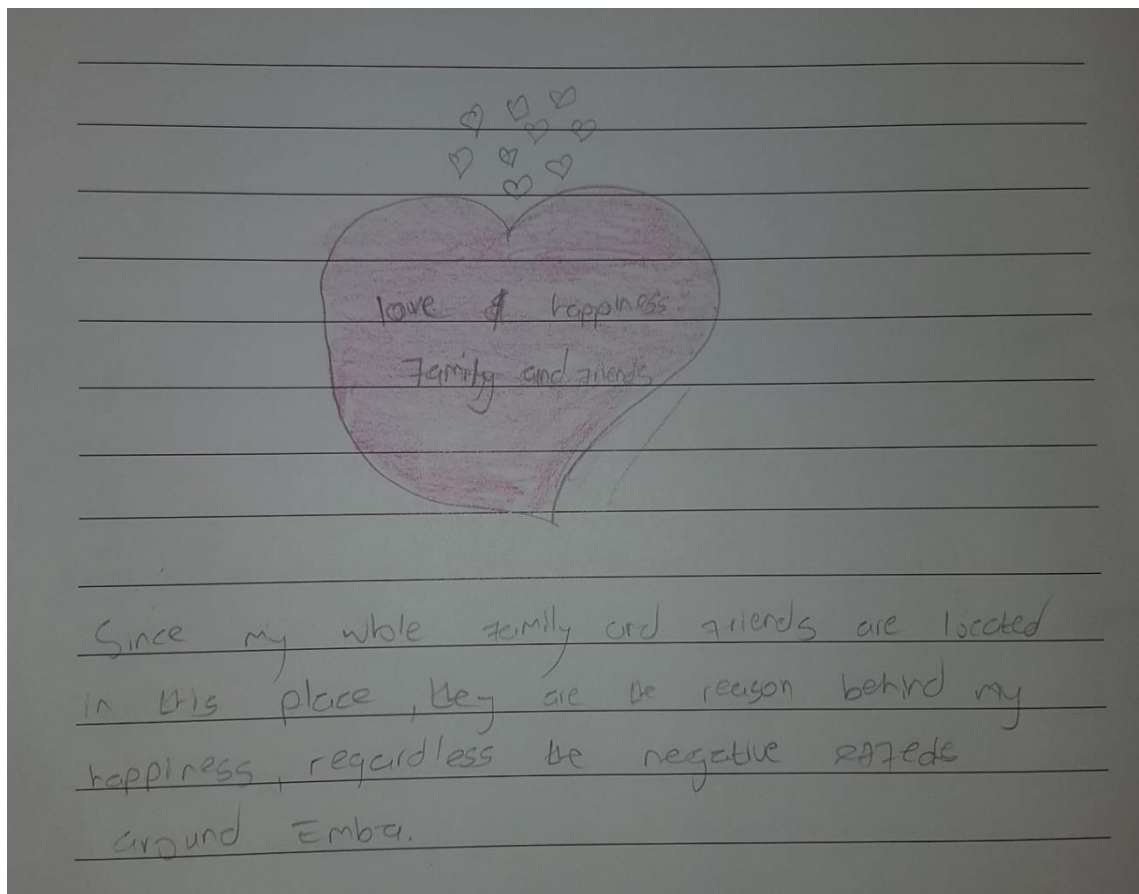
Figure 4.8: Carol's drawing and written response to what/who helps her to be OK

4.3.2   Families Provide Advice and Guidance

As discussed earlier, I elected to include advice under the heading, "Families Provide Affective Support to Youth." It is clear that advice provided by family members may facilitate the resilience of adolescents through providing guidance about behaviour, emotions, or academic-related matters (Li, Bottrell, & Armstrong, 2017).

For instance, Nkosinathi from Group 3 drew his family and labelled it "Family Values" (see Figure 4.9). He then wrote that his family guided him along the right path and helped him to follow his heart (Figure 4.10).
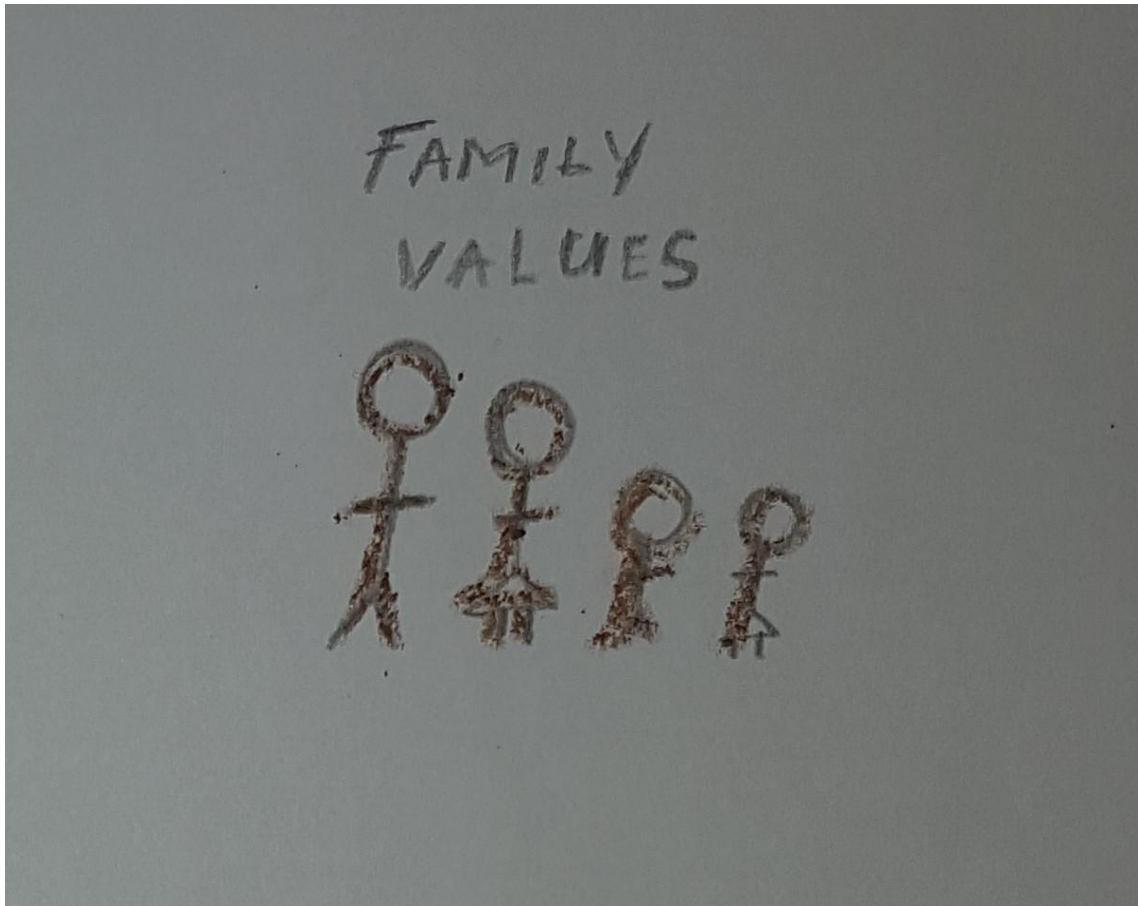
Figure 4.9: Nkosinathi's drawing of what/who helps him to be OK

Figure 4.10: Nkosinathi's written response to what/who helps him to be OK

Similarly, Brute, a participant from Group 4 drew a picture of a house and labelled it "Family" (See Figure 4.11), and explained that when experiencing negative emotions, family made him feel better (see Figure 4.12). Brute elaborated on the way in which his family does this when he said,

> The advice that family gives.

And, another participant from Group 4, Siya, answered the question of what or who was most important in helping him to be resilient by stating that it was his family, and further explained:

> My family gives me advice on what to do, when to do that, how to treat people, how should people treat me.

He further clarified that it was his grandfather who gave him the best advice.
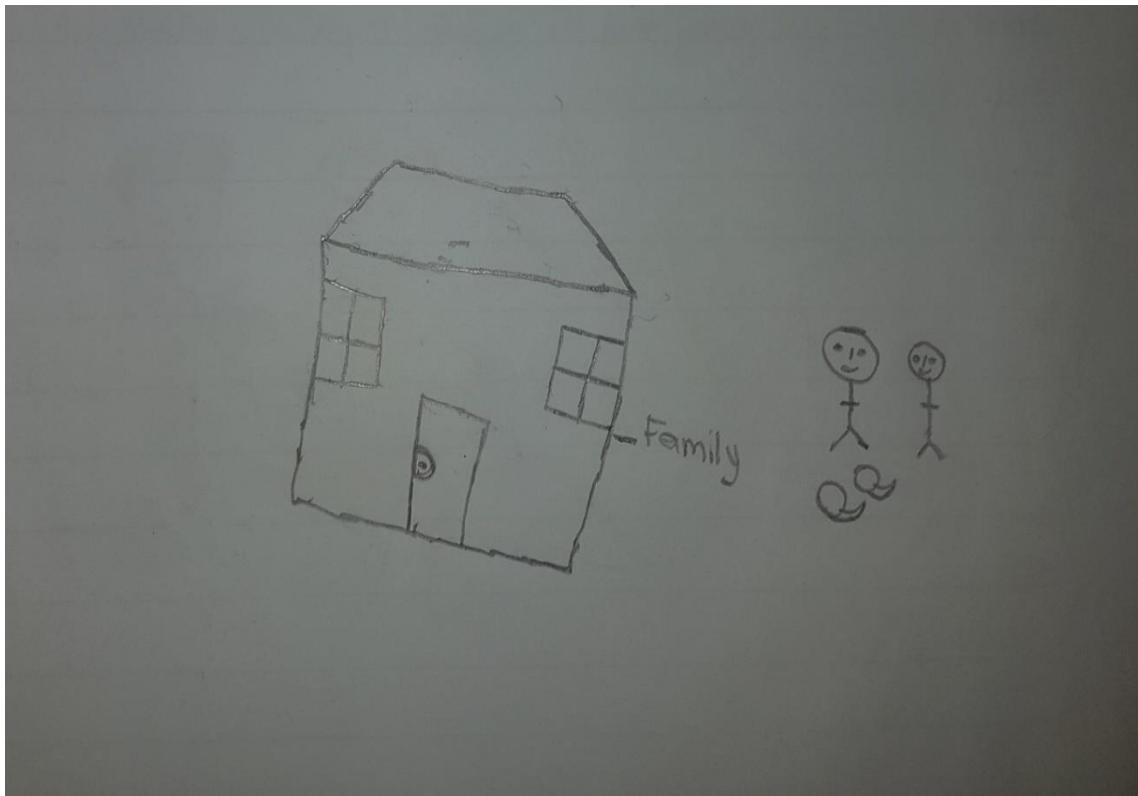
Figure 4.11: Brute's drawing of what/who helps him to be OK

Figure 4.12: Brute's written response to what/who helps him to be OK

4.3.3   Making Sense of how Family Members Provide Support Through Love, Attention, and Guidance

This theme of family members providing affective support to youth, like the first, aligns with current resilience literature that reports that affective support is an important ingredient in facilitating the resilience of young people. South African studies (Azmitia et al., 2018; Bireda & Pillay, 2018; Hernández, 2002; Raniga & Mthembu, 2017; Theron & Theron, 2010; Theron, Theron, & Malindi, 2013; van

Breda & Theron, 2018; van Rensburg, Theron, & Rothmann, 2018; Wild, 2018), as well as international studies (Tugade, Fredrickson, & Feldman Barrett, 2004; Werner, 2004; Ungar, Brown, Liebenberg, & Othman, 2007; Walsh, 2016), have supported the idea that emotional support, active family support, offering emotional assistance in the form of love and attention, and guidance are required in order to facilitate resilience. When reviewing my findings, it was apparent that affective support, in the form of love, attention, and advice, assists the young people included in my study of limited scope to be resilient.

I would like to refer specifically to an article by van Breda and Theron (2018), in which 61 South African resilience studies were reviewed. Findings from this review indicate that affective support was the most prevalent factor in the facilitation of resilience, and that it was provided not only by immediate family members but also by members of the extended family. From my own experiences as an educational psychologist in training, I have observed that adolescents who experience feelings of being valued by parents and love from family members (e.g., siblings) experience greater resilience, further supporting van Breda and Theron's findings of the importance of affective support in championing the resilience of youth exposed to risk.

In Chapter Two (Section 2.3.2.), I referred to families parenting well, and explained that it is not only parents who provide parenting but, often, other family members as well (e.g., grandparents, Dolbin-MacNab & Yancura, 2018; Wild, 2018). This was supported by my findings in which participants referred to advice given by a grandparent and love provided by siblings. Participants avoided referring to parents and spoke only of their "families" that had been previously outlined as including extended members of the family (Chapter One, Section 1.7.3.). From my own experiences working as a teacher in a disadvantaged South African community, I have often noticed the role that extended family members play in the lives of adolescents—for example, grandmothers who take learners to school, or uncles and aunts attending parent–teacher meetings on behalf of parents who work long hours.

The evidence provided above, under the heading, "Family Members Provide Affective Support to Youth," fits with findings from literature reported in Chapter Two, whereby parenting practices (e.g., support and guidance, Prioste et al., 2015),

affective support (e.g., love and care, Theron, Theron, & Malindi, 2013), open communication (Finan et al., 2015), and togetherness (e.g., showing care by coming together, Ozer et al., 2017) function as possible facilitators of resilience. Findings from my study of limited scope thus strengthen my belief that parenting practices, by all family members, have the ability to support youth affected by risks such as chronic physical discomfort, poor health, and adversity.

Furthermore, specific reference by one adolescent participant to "family gatherings" may also support previous findings discussed in Chapter Two, in which resilience is seen to be championed by family routines and rituals (Deist and Greeff, 2014), although these gatherings were not clearly established as a result of routine or rituals. If the above example (family gatherings) does refer to a routine, for example, eating dinner together, it might correspond with literature from Chapter Two that holds that family routines may strengthen resilience (Cluver et al., 2016; Crespo et al., 2013; Spagnola & Fiese, 2007; Wilder & Granlund, 2014).

Discussion of findings from my study of limited scope indicates that the presence of family members, the love that they provide, and attention that is dedicated to adolescents facilitates resilience in youth affected by the petrochemical industry. In this way, the presence of family members has also contributed to a sense of security acting as a resource, as discussed in Chapter Two (Section 2.3.1.3.), assisting to foster resilience. Participants, however, did not mention the effects of monitoring or supervision during discussions. Although monitoring and supervision was discussed in Chapter Two (Section 2.3.2.1.), and an abundance of literature exists that supports its ability to support resilience (Fayyad Cordahi-Tabet et al., 2017; van Rensburg, Theron and Rothmann, 2015 & Ungar, 2004), the participants in my study of limited scope did not make mention of this topic. One possible explanation may be that adolescent participants were surrounded by peers, and thus did not wish to divulge the supervisory techniques that their parents employ. Another possible explanation may be that, in the context of a rural community affected by the petrochemical industry, youths did not view monitoring and supervision as contributing toward resilience.

Although the above findings correlate with those found in previous studies discussed in Chapter Two (Patterson, 2002a, 2002b ; Prioste et al,, 2015; Raniga & Mthembu,

2017; Theron & Theron, 2010; Theron, Theron, & Malindi, 2013; Ungar et al., 2017), none of these previous studies have included youth who reside in an area dependant on the petrochemical industry. In this way, my study is able to make a small contribution to better understand how families affected by the petrochemical industry may be able to support young people residing in the community to be resilient.

4.4   THEME 3: FAMILIES MOTIVATE YOUTH TO CREATE POSITIVE FUTURES

Participants from three groups (i.e., Groups 1, 2, and 4) reported that motivation from their family to remain positive despite adversity, attain alternative employment, or to pursue career opportunities away from Sasol, helped them to be resilient. For instance, Lunga, from Group 4 attributed part of her resilience to her parents. Lunga said,

> My parents also keep me motivated so that I cannot stress about this pollution.

Similarly, two participants from Group 4, Tshepo and Quphza, indicated that positive motivation from their families assisted them in being resilient despite residing in a negative environment. It is evident from the data collected that motivation can be provided in two ways, namely, direct and indirect motivation. Direct motivation refers to motivation provided by the family aimed at encouraging youth to peruse goals directed at a better future. Indirect motivation refers to motivation that is not provided by the family, but which results in future aspirations that will positively affect the individual and family.

For example, one participant, Gugu from Group 2 stated that her father did not want her to work at Sasol and so motivated her regularly to strive for other employment. She said:

> My father obviously owns a taxi and he takes people from Sasol and all but he motivates us each and every day, he does not want us ending up at Sasol.

Likewise, another participant, Khutso from Group 2 explained that his father works at Sasol and wants more for his children:

> He always tries to motivate us to get out there and learn new things, ya, and study about other careers.

These are examples of direct motivation, provided by the family.

In contrast, indirect motivation is not provided by family members. For example, Siya from Group 4 explained that students work hard at school in order to pursue outside opportunities for themselves and their families. He said:

> Some kids push well in school to get their families out of this community and that's also what I'm doing right now.

This participant associated youth resilience with the prospect of moving away in order to better the lives of his family members. Similarly, a participant from Group 1, Zenande, said:

> Personally I have a bigger dream than Sasol.

—indicating his desire to go beyond a career path at Sasol.

This theme of families motivating youth to create positive futures, like the previous themes, aligns with literature regarding motivation serving as a facilitator of resilience. South African (Dass-Brailsford, 2005; Theron, 2007) and international (Moreira, Galindo, & García, 2019; Schoon, Parsons, & Sacker, 2004; Waxman & Huang, 1996) studies have reported that parental motivation for their children to seek positive future aspirations, parental expectations, and parental encouragement have a significant influence on a young person's resilience.

Findings discussed in this theme, of adolescent participants being positively affected by family members' positive motivation, align well with research findings from Chapter Two (Section 2.3.3.) in which healthy family habits were considered to champion resilience. Family communication, in which emotions are expressed freely, allows for better stress management by adolescents (Fonseca et al., 2017), therefore, adolescents are able to be resilient despite their environments due to the positive motivations offered by their families. Although this motivation was discussed in Chapter Two with specific focus on educational ambitions, the same could be applied to motivation centred on achieving positive future aspirations. The above findings may be linked to direct communication given that parents who themselves work for Sasol motivate their children to seek alternative future employment in an attempt to avoid similar dissatisfaction, make better decisions, and pursue better opportunities.

In terms of the examples of indirect motivation, participants were motivated to succeed so they might help their families. This care for participants' families may indicate potentially positive family cohesion, as emotional bonds between members are well established as members support one another and act as a unit. Adolescents' refusal to abandon their families, explaining that they (adolescents) wish to return once they have been successful, to take care of their families, indicates the bond with family members. As explained in Chapter Two by Vermeulen and Greeff (2015), a strong sense of togetherness and support within a family facilitates resilience. Eggerman and Panter-Brick (2010) went on to explain that certain cultural values acted as promotive factors, strengthening unity. In my data, I believe family unity is evident and, thus, adolescents may be seen as enjoying good family cohesion. Furthermore, effective family cohesion was associated with better parent–child attachments (Rawatlal, Kliewer, & Pillay, 2015), which may explain parents' attempts to motivate adolescents to seek positive future opportunities.

From the above findings, it is evident that adolescents residing in eMbalenhle have the desire to escape their current circumstances, in the hopes of a positive future, and that participants' families support them in seeking positive future opportunities. Although literature has supported this, little is known about the effects of direct and indirect motivation on youth living in a community dependant on the petrochemical industry. In this way, my study can make a small contribution to better understanding how direct and indirect motivation can influence an adolescent's aspirations for future success or employment in other career fields.

4.5   CONCLUSION

In Chapter Two, I referred to Masten and Monn's (2015) dimensions of family functioning, focusing specifically on three dimensions, namely, the family providing resources that enable resilience, families parenting well, and family habits being of a healthy nature. In my study of limited scope, I learned that the youth residing in eMbalenhle experience a number of risks to their well-being, including chronic physical discomfort, poor health, and limited employment and study opportunities. Despite these risks, my findings have indicated that families play an important role in the championing of resilience of the adolescent residing in eMbalenhle.

In summary, my discussion in this chapter is consistent with the notion that families providing financial security, through the provision of basic needs, may champion resilience for adolescents affected by the petrochemical industry. However, my study indicated that the family members of participants included in this study were all employed by Sasol, and that this employment allowed families to provide for the basic needs of their children. The silence in literature pertaining to employment at a single company may be due to a lack of research conducted in rural communities dependant on the petrochemical industry—where one company is responsible for most of the employment opportunities or, potentially, may be due to the specificity of the selected context (i.e., a disadvantaged South African community affected by the petrochemical industry). A comparison between my study of limited scope and the larger RYSE project would thus potentially yield more information regarding the dependence of communities affected by the petrochemical industry on a particular source (e.g., the most prominent petrochemical company).

My discussions in this chapter also fit with Masten and Monn's (2015) writings about the importance of affective support and connectedness between family members, and how this is seen to enable resilience. It is evident that love and attention from family members have assisted adolescent participants is overcoming factors associated with the petrochemical industry. Interestingly, my discussions also indicate that the provision of advice and guidance by family members may be important, something that was not discussed in the review of affective support literature in Chapter Two. This might be because I did not include advice and guidance in my review of the literature in Chapter Two, resulting in me unintentionally refraining from discussing the advantages of advice and guidance in promoting youth resilience. However, it is evident from the responses by participants that advice and guidance should be included when considering affective support, and should be taken into account when contemplating the potential this form of support might have in facilitating resilience in youth affected by the petrochemical industry.

Finally, the findings from this chapter regarding parental motivation can be linked to families having healthy habits, which was also discussed by Masten & Monn (2015). Although, in Chapter 2, I reported on parental motivation aimed at future success, I did not review studies in which parents motivated adolescents to seek employment

different from their (parents') current employment—as is the case in this study in which parents motivate youth to seek alternative employment to Sasol. This may be due to existing studies focussing on parental expectations and motivation regarding academic achievements and educational pursuits rather than parental example. Alternatively, this may be due to a lack of studies conducted in rural communities affected by large industries, such as that of the petrochemical industry in eMbalenhle.

In the next and final chapter, I incorporate the discussions of my findings from my study of limited scope from this chapter into an overall conclusion to my mini-dissertation.

5. CHAPTER FIVE: CONCLUSIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

In this chapter, I summarise how the data generated and discussed in Chapter Four has answered the research question posed in Chapter One: "How do families facilitate the resilience of young people residing in a community challenged by risks associated with the petrochemical industry?" Additionally, I discuss the limitations of my study and the experience of being involved in the RYSE study. Finally, I make recommendations for future research, with a particular focus on how my findings may contribute to current resilience literature and how this contribution might be useful to educational psychologists.

5.2 RESEARCH QUESTION REVISITED: CONCLUSIONS ABOUT FAMILIES, RESILIENCE AND ADOLSCENTS IN EMBALENHLE

The primary research question directing my study of limited scope was: "How do families facilitate the resilience of young people residing in a community challenged by risks associated with the petrochemical industry?" As discussed in Chapter One, in order for resilience to be present, adversity must exist (Masten, 2018). Therefore, before discussing the answers I have found to my research question, I will first confirm that the adolescent participants included in my study were at risk, and verify what these risks were, to better understand the petrochemical context in which these youths reside. Using body maps, during research activities conducted in August 2017, participants narratively accounted for the risks they experience due to the petrochemical industry. These risks include chronic physical discomfort, poor health related to pollution, and limited employment and study opportunities, as indicated in Figure 5.1.
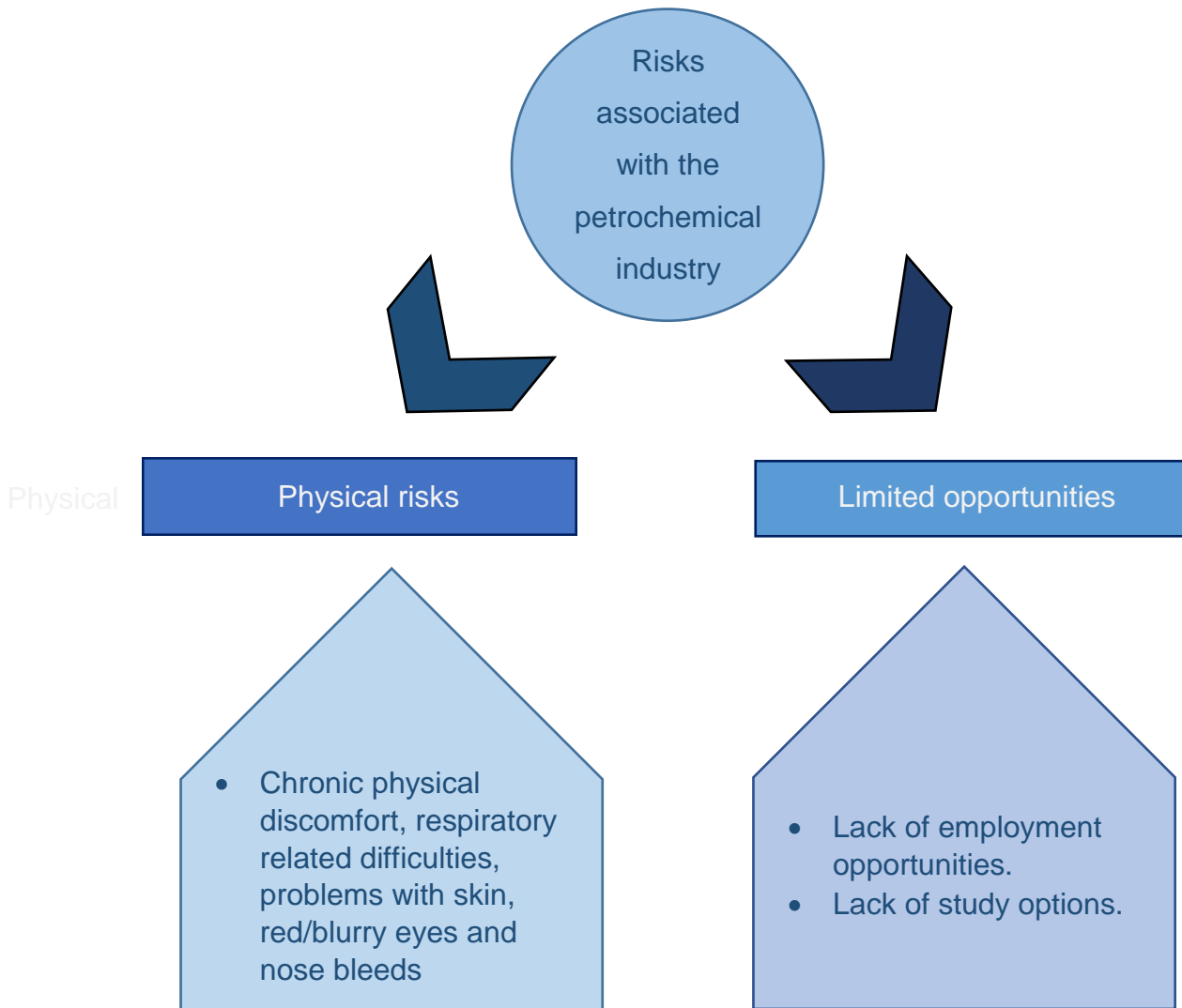
Figure 5.1: Risks associated with the petrochemical industry, as indicated by adolescent participants

Despite these risks and their associated negative effects on the well-being of youths residing in eMbalenhle, adolescent participants reported that certain actions by family members support adolescents in managing the risks associated with the petrochemical industry, resulting in improved resilience. Figure 5.2 serves as a visual summary of the themes identified (from my findings in Chapter Four) as supporting the idea that families assist adolescents residing in an industrialised area to be resilient.
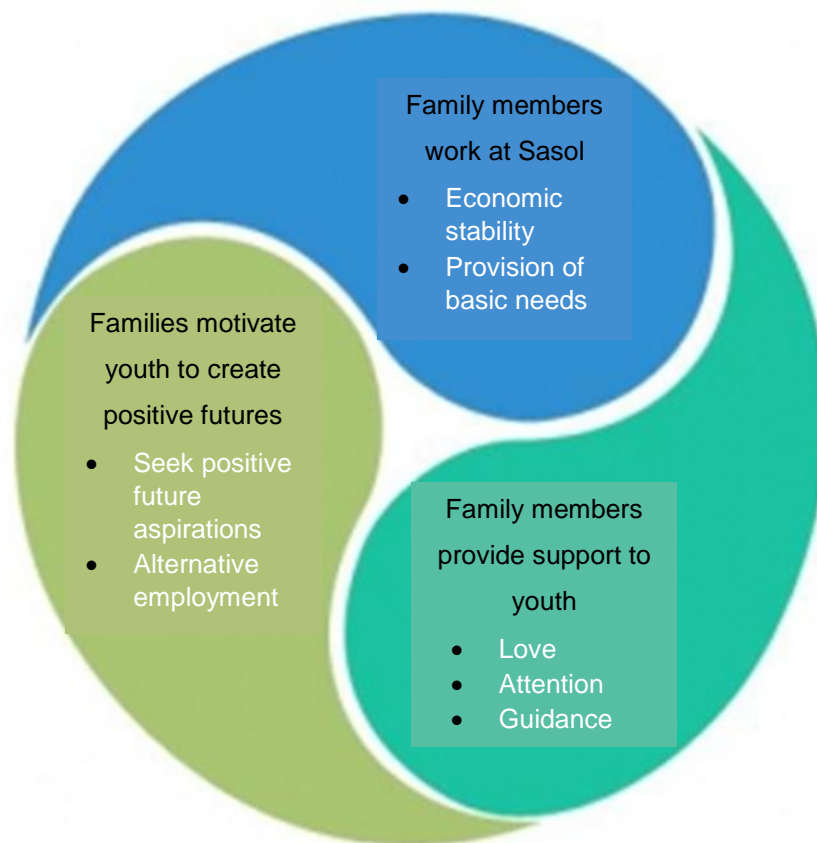
Figure 5.2: Main themes that have answered the primary research question

The figure shows that family members (e.g., parents, siblings, and extended family members) employed at Sasol were seen as championing the resilience of adolescents in the family through their ability to provide material resources (e.g., financial stability, food) that fulfilled adolescents' basic needs. Adolescent resilience was further enabled by the family's willingness to provide emotional support in the form of love, attention, and guidance, which has received credit in past studies discussed in Chapter Two (e.g., Azmitia et al., 2018; Bireda & Pillay, 2018; Hernández, 2002; Raniga & Mthembu, 2017; Theron & Theron, 2010; Theron, Theron, & Malindi, 2013; Tugade, Fredrickson, & Feldman Barrett, 2004; Ungar et al., 2007; van Breda & Theron, 2018; van Rensburg, Theron, & Rothmann, 2018; Walsh, 2015; Werner, 2004; Wild, 2018). However, these previous studies did not consider how families facilitate the resilience of young people residing in a community challenged by risks associated with the petrochemical industry. The final

theme identified in Figure 5.2 is that families motivate youth to create positive futures, with a particular emphasis on parents motivating youth to seek employment at companies other than Sasol. Families encourage adolescents to focus on education and follow their dreams—to go beyond the call of the petrochemical industry, to which they have become accustomed. Extant South African resilience literature has reported that families encourage adolescents to engage in education and to aspire to better lives that are built on completed education (e.g., Phasha, 2010; Schoon, Parsons, & Sacker, 2004; Theron & van Rensburg, 2018). However, I did not find any published South African resilience studies that reported that parents motivated adolescents to choose a career path or employment options that would free the adolescents from dependency on a local industry.

In summary, this answer to my research question makes a small contribution to the resilience literature because it adds a particular focus on the role of industry (e.g., Sasol) in assisting families to support resilience, by providing economic stability. However, it also focuses on how the opportunities to work for the industry might limit the opportunities available to youths in this context, and how resilience-enabling families respond to this. It also confirms previous understandings of the importance of families providing adolescents with affective support (e.g., love, attention, and guidance) to champion resilience.

The findings of my study of limited scope assimilate well with the social ecology of resilience theory (SERT) that Ungar (2011) proposed because they confirm that an adolescent's interactions with her or his environment (e.g., family members and the resources that they provide) champion resilience. My study complemented the principle of decentrality, given that my focus was on the role of family and how the family might facilitate the resilience of young people affected by the petrochemical industry. However, my study of limited scope did not consider individual or community-related protective factors, which results in a less holistic view of the interactions between the individual and her or his environment, resulting in decentrality not entirely being considered.

It is apparent that resilience is a marvel that is context specific (Riley & Masten, 2005), and varies depending on race, gender, class, and culture (Ebersöhn & Malan-van Rooyen, 2018). This links well with the SERT principle of complexity. In

my study of limited scope, participants attributed their resilience to actions or supports by their families, agreeing that families played a protective role in championing resilience (see Figure 5.2). For example, participants found that the employment of their family members at the company (Sasol) responsible for some of the risks noted, in fact, contributed toward them being resilient. However, participants varied on which supports they believed assisted them most, and how these supports were offered. For example, one participant spoke of the time his family gave him in the form of attention, while another spoke about family members providing her with love—both being examples of affective support but perceived as different actions. I concluded that participants reported different detail depending on the context of their family. I had too few participants to consider whether the varied details related, perhaps, to sex or gender identity.

In terms of cultural relativity, my study of limited scope supports the principle that factors such as family traditions, culture, and context affect how resilience is supported (Liebenberg & Theron, 2015). For example, in Theme 3 (Chapter Four, Section 4.4.) I discussed how families motivate youth to seek positive futures. This is an example of how experiences of other generations are used to motivate adolescents to seek employment different from their own. The petrochemical industry (context) affects how family members provide youth with support that affects their resilience. Moreover, participants reported that, often, support came from extended family members (e.g., grandparents), confirming literature that states that extended family members are culturally valued in the South African context (Haffejee & Theron, 2017; Makiwane, Gumede, Makoae, & Vawda, 2017; Nduna & Sikweyiya, 2015).

Beyond this, few participants discussed cultural aspects and traditions that supported their resilience. One possible reason for this might be because research activities did not allow enough time to discuss details of family supports, therefore participants discussed on what type of support was provided, and spent less time discussing the cultural underpinnings of these supports. It could also be because I did not specifically ask about cultural underpinnings. I believe the principle of culture must therefore be carefully considered in future research in an attempt to better understand its role in influencing family supports that encourage resilience.

Finally, the principle of atypicality was not represented in my study of limited scope. Among the participants residing in eMbalenhle, none reported use of maladaptive methods of coping, or that their families supported resilience in ways that could be questioned but, rather, employed methods that resonate with those found in recent resilience literature. It is possible, however, that participants were potentially reluctant to share atypical experiences of support due to research being conducted in a group setting.

The implications of my findings for educational psychologists are that in order to effectively assist adolescents, it is necessary to be mindful of context, understanding that resilience varies depending on varying contexts (Ungar, 2008). My findings, that families facilitate resilience by providing economic stability, affective support, and motivation to create positive future aspirations, must thus be carefully considered and critically reviewed before they can be applied to other similar contexts, and should serve, instead, as a starting point from which to progress. This conclusion caused me to consider whether adolescent resilience would become a redundant concept should social ecologies ensure that adolescents' basic needs are met (Staub, 2003). It is therefore necessary that an educational psychologist carefully investigate the context in which adolescents find themselves in order to understand how families function, before they would be able to assist family members to better facilitate adolescent resilience. Through this understanding of the context being investigated, it will become clear whether my findings can be applied to a new context, or whether families should employ alternative supports.

5.3   LIMITATIONS OF THIS STUDY

During the research process, I was able to identify a number of limitations to this study. One limitation I identified was that I was part of a larger study (RYSE) involving a number of researchers and student (co)researchers, pre-selected community advisory panel members, local community co-facilitators as well as a project manager (Chapter Three, Section 3.2). This resulted in me having little control over the generation of data because each of my fellow researchers dealt with only a small specific group, each producing her or his own set of data. This was a challenge because I was not able to control data generation from other groups, and could not elicit more information specific to my research question. Despite my

limited control over the other groups, however, each group was able to generate sufficient data that I could use to answer my primary research question. Furthermore, the question used in the second activity (Section 3.6.2.) to gather data focussed on the participants' negative experiences of the petrochemical industry, failing to consider the potential positive experiences which participants may have had as a result of the petrochemical industry. This assumption that participants' experiences of the petrochemical industry are negative should be avoided in all future research activities.

A second limitation of my study is that it centres on the family's role (Chapter One, Section 1.1.) in championing the resilience of adolescents affected by the petrochemical industry. My study supports the extant literature that families are key in championing the resilience of vulnerable adolescents (Burnette et al., 2019; Wong, Liamputtong, Koch, & Rawson, 2019). However, I am aware that other resources (e.g., personal protective processes (Malindi, 2018) and community resources (Rapaport et al., 2018)) are also important, and my study is thus not a holistic representation of the enablers of resilience. My study was done in conjunction with two others as part of the RYSE project, and these should be reviewed together to better understand what enables the resilience of the adolescents growing up in a township adjacent to the petrochemical industry.

The way in which data was generated may also be seen as a limitation in this study. Data was generated on one day, leaving little time for participants to ponder ideas or come back and further contribute to answers. This also meant that participants became tired toward the end of the day, and were less willing to contribute energetically to questions or partake in activities. My fellow co-researchers and I were also relatively inexperienced. Despite having received some formal training in how to successfully conduct research, for example, we were concerned that this training had not been practised, and that our skills had not yet been formally developed (e.g., which culturally acceptable gestures to use or avoid during activities). If research was conducted over a number of days, or over a longer period of time, and if we had more experience, this may have assisted in generating richer data. Some participants were also more withdrawn than others, and were thus unlikely to contribute as much to discussions due to discussions being carried out in a group setting (Hennink, Hutter, & Bailey, 2010).

Another limitation is that I experienced a language limitation while conducting research. Participants from the eMbalenhle community spoke mostly isiZulu (Census 2011, n.d.). I have no understanding of this language and thus found it difficult to understand participants when they spoke informally in the time between activities, or during the planning phase of certain activities. I was thus very aware of the language I selected to use during discussions given that my first language was not the same as the participants I had been grouped with, resulting in the possibility of confusion or misunderstandings. This also required me to clarify some elements of our discussions to ensure my own understanding. The assistance of a local facilitator, who spoke both isiZulu and English very well, assisted me greatly in this respect because he assisted in explaining instructions to participants, and helped to clarify explanations for me so I could better understand discussions.

Despite these limitations, I believe that my findings have made a small contribution to better understanding the role that families play in the facilitation of resilience in adolescents affected by the petrochemical industry. I also believe that if the limitations from my own study were addressed, that future studies might make rich contributions to what is known about resilience in contexts such as eMbalenhle.

5.4   REFLEXIVITY

Reflexivity refers to a process whereby a researcher engages in continuous self-reflection on their culture, experience, and opinions in an attempt to better understand their actions, state of mind, and perceptions—and how these might affect their research (Darawsheh, 2014). Reflexivity should be applied throughout the qualitative research process, requiring the researcher to be entirely transparent about her or his decisions (Engward & Davis, 2015). I will be discussing my own reflection process in three sections: firstly, as I experienced the research process as a postgraduate student, then as an educational psychologist in training and, finally, from a personal perspective.

5.4.1   My Reflections as a Postgraduate Student

Although I previously believed that I had an understanding of resilience, my study has enlightened me to how insufficient my knowledge and understanding of resilience was. The larger RYSE project has therefore provided me with the

opportunity to learn more about resilience. Being part of this team provided me with the opportunity to learn from experienced researchers, and allowed me the chance to clarify when unsure—ensuring that I learned to do things in the correct manner. However, it also allowed me to work with inexperienced co-researchers, creating an atmosphere of mutual learning and development.

Furthermore, prior to this study, I had had only limited experiences with conducting research, analysing data, and generating findings. The experiences and skills I learned during my honour's degree (most of which were theoretical rather than practical and did not include analysis), I felt, did not properly prepare me for this experience and thus I felt overwhelmed by the process. However, since my study, I believe I have learned a substantial amount regarding how research is conducted, and my own research notes reflecting the process of generating findings have revealed professional as well as personal growth.

 I believe I now have a better understanding of

- the planning required before research can commence (e.g., how many participants can be included or the length of time I would require),
- the process of generating data through activities such as arts-based methods (e.g., the use of activities that allow for participants from different cultures to engage in the same activity),
- how the selection of these methods might affect the richness of data (e.g., if language is a barrier, how this method can still allow for rich data),
- the process of working through data and analysing (e.g., transcribing and coding of raw data),
- reviewing literature carefully, writing about my findings and comparing this to literature and, finally, of making sense of what these findings mean.

I have also learned valuable lessons regarding working as part of a group, and how helpful it can be to work as a team (e.g., checking on another's findings, ensuring bias is avoided). I believe the skills I have learned throughout this process are priceless, enabling me to complete future research tasks more competently.

Furthermore, I had prior knowledge of Sasol and the operations they employed due to my father working as a hydraulic engineer and having completed many projects for Sasol. I was eager to learn and asked him many additional questions related to how Sasol operated once I learned that my study would be conducted in a community affected by the petrochemical industry. This, I believe, gave me an interesting perspective because I was able to better understand some of the operations that participants described. I was also able to compare the perspectives of my father (as someone residing outside the community of eMbalenhle) with the perspectives of participants (residing in the community of eMbalenhle).

5.4.2   My Reflections as an Educational Psychologist in Training

At the start of my study, I did not understand the connection between the petrochemical industry and educational psychology. However, once I began to engage in the research process, I found that the residents of eMbalenhle, despite facing countless challenges associated with the petrochemical industry, showed resilience. Research from Chapter Two (Section 2.2) highlighted the countless risks associated with the petrochemical industry and, ultimately, emphasised the need for psychological intervention to promote well-being among local community members. This realisation opened my eyes to the potential role of an educational psychologist in understanding why certain contexts cause risk that requires resilience, and how this resilience might be fostered. This was an important experience for me as an educational psychologist in training because it highlighted the role that context plays in my current and future interactions with people. One of the most important realisations that I take away from my research experience, as an educational psychologist in training, is that resilience is, in fact, a common occurrence, especially in South Africa. I found that resilience was all around me, and had always been—but I had not realised it before my study. This gives me newfound determination to celebrate and champion resilience in all my future clients and cases.

Regarding how my data were generated, I made use of arts-based activities and verbal explanations of artistic products. These related closely to what I was taught at the University of Pretoria. My modules taught me about the importance of free expression, and the effectiveness of using creative activities and group discussions

to facilitate free expression. After completing my data generation, I also employed these activities in my practical individual cases (i.e., cases that educational psychologists in training at the University of Pretoria are given in order to fulfil the practical requirements of the degree), and found that in both my cases (both clients were youths) they resulted in better rapport with my clients, as well as richer information, assisting me to better help my clients. As a result, I learned that arts-based methods can effectively be applied when working with young people in a variety of settings (e.g., with a privileged adolescent, as in my first case, as well as with a disadvantaged youth, as in my second case). Arts-based activities also allow for more informal interaction between the client and the psychologist, creating an environment of comfort and sharing (Williams, Dingle, Jetten, & Rowan, 2019), which in itself may be therapeutic (Ennis, Kirshbaum, & Waheed, 2018), without the invasiveness of asking direct questions.

Furthermore, the identified themes in Chapter Four highlighted the function of the family in the resilience and well-being of adolescents. This is something I have observed as an educational psychologist in training because I have been witness to the position of the family in therapy and the power that it holds in helping an individual to overcome hardships. As a future educational psychologist, I believe the role of the family is one that should be carefully considered when viewing an individual holistically. Considering this, the findings in this study excite me because I believe they complement understandings that some families can champion the resilience of adolescents residing in areas affected by risks (Jakob, 2018). It ignites a desire in me to find out more about how it is that families enable youth to be resilient, in order to learn, develop, and implement more of these enablers in an attempt to champion resilience.

5.4.3   My Reflections as an Individual

My research allowed me to be exposed to a community affected by the petrochemical industry, a context that I have not previously been exposed to. It also exposed me to the youths who reside in this area, and the attitudes or experiences they have on a daily basis—and how different these are to my own context and experiences. A personal limitation I encountered during the research process was that of accepting that I come from Centurion, a suburb of privilege that does not face

the difficulties that this community experiences. I found myself needing to remind myself not to feel guilty about my context but, rather, to accept the context I was in and to ensure professionalism was maintained. The process of working with individuals different from me, in a context other than that which I am used to, helped to open my eyes to aspects of my own country, and even region, that I had not previously considered.

The themes identified in Chapter Four resonate with me because I have seen the role that my own family has played in my success in life. Without the financial support of my parents, I do not believe I would have received a quality education, allowing me to further my studies. My family's continued emotional support has served as a safety net for me in that I have always had people I could ask for help, or simply to advise me, when I've been at a loss for answers. One participant spoke about the role his sisters play in supporting him emotionally, and this especially echoed with me due to the role my brother has played and continues to play in supporting me emotionally.

At the start of this study, my assumptions were that families would enable the resilience of youth. I expected that youth would highlight the role that family played, and that many participants would attribute their resilience to their families. Upon reflection, I think that this assumption was based on my belief that my family has been largely responsible for my own resilience. Although this assumption was based largely on my personal beliefs, my study of limited scope has confirmed the powerful role of family in supporting youth to be resilient.

On a more personal level, at the start of my study I felt as though I was simply a student and could not be expected to complete this study without explicit instruction and step-by-step guidance. However, once research had commenced, I found myself drawing on skills I was not aware I possessed (e.g., when to ask a participant to explain further, and how to do this in a respectful manner), while acquiring skills I did not know I needed (e.g., how to code raw data). Similarly, I felt I knew nothing about the youth who resided in eMbalenhle and would, therefore, have to work twice as hard to build rapport and establish connections. I was concerned that due to our differences (race, culture, language, etc.), the youth participants would have difficulty connecting with me. However, this was not the case. Participants were

welcoming and engaged with me not only about matters relating to the research, but also about personal experiences and culture, settling my fears and allowing me to be comfortable with engaging with them. Unexpectedly, we found many similarities and, furthermore, were able to celebrate our differences (e.g., participants attempted to teach me how to dance as they did, which provided us all with a chance to be silly and laugh). This experience proved to me that when working with people, differences are not necessarily barriers but, rather, learning opportunities.

5.5　RECOMMENDATIONS

5.5.1　Recommendations Relating to Future Research

Although working in a group to generate data is a limitation, if I were to repeat my study, I would elect to use this method of data generation again because I believe that it served as a method of checking my own perceptions or interpretations against those of others (Connelly, 2016). Because my co-researchers and I worked as a group, processes (e.g., data generation) and interpretations were discussed at length and checked against the interpretations of the rest of the group. This was a helpful way of ensuring findings were accurate, and that personal bias did not play a role. One way, however, in which the use of groups might be maintained but varied, would be to shuffle participants in between activities so that each activity would be completed with a new group of participants. For future research, I would also recommend that group discussions be combined with individualised activities such as one-on-one interviews to ensure all participants are heard in a context in which they feel comfortable. Another way to ensure richer data might also be that data generation was spread out over a longer period of time, allowing participants to ponder activities and return with new ideas or previously overlooked remarks.

Furthermore, I believe that in future studies, student researchers should receive more extensive training in which skills taught in training can be practised, perhaps with local facilitators present, to establish these relationships before commencing with formal research. This would also ensure that activities carried out on the day (e.g., the explaining of what is expected during activities) would commence smoothly.

Considering the findings in Section 4.2, of family members who work at Sasol assisting in the facilitation of resilience for adolescents residing in eMbalenhle, I believe it would also be beneficial to study the resilience of youth whose biological parents or family members are not present (e.g. deceased), establishing an understanding of what or who may constitute "family" for these individuals. Furthermore, I would also recommend that gender configurations in families be carefully considered in future studies, so as to establish the role (if any) of male figures (e.g. grandfathers or uncles) within South African families, and how they may facilitate or impede the resilience of youth.

5.5.2 Recommendations for Educational Psychologists

Theron and Donald (2013) stated that educational psychologists require an understanding of resilience theory in order to make a difference to the lives of the adolescents they work with. Theron and Donald went on to discuss that it is not enough to understand this resilience but that educational psychologists must understand resilience within the context that it exists, and that this understanding should include the ecologies in which individuals exist.

My study of limited scope may assist educational psychologists to better understand the role of the family in enabling resilience in young people residing in a disadvantaged community affected by industrialisation. An educational psychologist should seek to promote aspects of functioning that are positive, and attempt to restore aspects that are maladaptive. Because resilience is seen as contextually specific, it is thus necessary for educational psychologist to conduct research within a specific context such as local schools, based on the functioning of a particular group of individuals, and then to use these findings to provide intervention that promotes resilience (Toland & Carrigan, 2011). My study serves to provide a starting point for a better understanding of what type of support families might provide to better equip young people in disadvantaged communities to manage risks they face within an industrialised context dependant on the petrochemical industry. It is my hope that educational psychologists might be enlightened to use my findings as a guide, and peruse further investigation regarding how they might support families in contexts similar to the one I have focussed on, as well as those different from my own, to serve as protective factors for their adolescent children.

My study of limited scope should also highlight the usefulness of working with families (rather than only the individual) when attempting to promote the resilience of adolescents. This is not a novel concept, and has been evident in recent resilience literature (Masten, 2018; Theron, Liebenberg, & Ungar, 2015; Walsh, 2016; Wijesekera, Emerson, Cortez, Alejos, & Lester, 2017). It is also advocated as good practice for educational psychologists (Woods, 2016).

Furthermore, the methods employed in my study were useful in better understanding the context in which these adolescents reside, as well as how their resilience could be championed (Smilan, 2009). I would therefore encourage educational psychologists to make effective use of arts-based activities when generating information (Driessnack & Furukawa, 2011; Green & Denov, 2019; Hirschson, Fritz, & Kilian, 2018). These activities could also be used with families in determining how opinions differ and how cohesion could be encouraged. Furthermore, the verbal explanations of creative products produced during these activities will likely be effective in promoting better communication between youth and their family members, assisting them to make better use of family resources. I would encourage educational psychologists to thus consider the micro-level carefully because this may assist them in better understanding how resilience could be facilitated.

5.6   CONCLUSION

This study has helped me to better understand the role that family plays, or may potentially play, in enabling adolescents to be resilient when residing in a disadvantaged community affected by the petrochemical industry. I learned how the youth of eMbalenhle manage adversity with the assistance of families, and have come to reflect more clearly on the supportive role of my own family. I was privileged to hear adolescent's accounts of the positive and protective effects of family providing economic stability, affective support, and positive motivation. In conclusion, even though there is no denying that there are a number of aspects that may be seen as protective factors (Masten, 2016; Ungar, 2015), my study (like many pre-existing studies) proves that the role of the family in promoting the resilience of young people is a fundamental one. I hope, therefore, that educational psychologists who work with adolescents from communities like eMbalenhle will heed Michael J.

Fox when planning how to champion resilience: "Family is not an important thing. It's everything" (as quoted in Khotimah, 2012).

6.   REFERENCES

Abubakar, A., van de Vijver, F. J., Hassan, A. S., Fischer, R., Nyongesa, M. K., Kabunda, B., . . . Newton, C. R. (2017). Cumulative psychosocial risk is a salient predictor of depressive symptoms among vertically HIV-infected and HIV-affected adolescents at the Kenyan Coast. *Annals of Global Health*, 83(5/6), 743–752.

Afifi, T. O., & MacMillan, H. L. (2011). Resilience following child maltreatment: A review of protective factors. *The Canadian Journal of Psychiatry, 56*(5), 266–272.

Aksan, N., Kisac, B., Aydın, M., & Demirbuken, S. (2009). Symbolic interaction theory. *Procedia-Social & Behavioral Sciences, 1*(1), 902–904.

Aldiabat, K. M., & Navenec, L. (2018). Data saturation: The mysterious step in grounded theory method. *The Qualitative Report, 23*(1), 245–261.

Altuğ H., Gaga, E. O., Döğeroğlu, T., Özden, Ö., Örnektekin, S., Brunekreef, B., . . . van Doorn. (2013). Effects of air pollution on lung function and symptoms of asthma, rhinitis and eczema in primary school children. *Environmental Science and Pollution Research 20*(9), 6455–6467. doi:10.1007/s11356-013-1674-1

Amato, P. R. (2000). The consequences of divorce for adults and children. *Journal of Marriage and Family, 62*(4), 1269–1287. doi:10.1111/j.1741-3737.2000.01269.x

Angell, C., Alexander, J., & Hunt, J. A. (2015). 'Draw, write and tell': A literature review and methodological development on the 'draw and write' research method. *Journal of early childhood research, 13*(1), 17–28.

Annan, J., Sim, A., Puffer, E. S., Salhi, C., & Betancourt, T. S. (2017). Improving mental health outcomes of Burmese migrant and displaced children in Thailand: A community-based randomized controlled trial of a parenting and family skills intervention. *Prevention Science, 18*(7), 793–803.

Antwi, S. K., & Hamza, K. (2015). Qualitative and quantitative research paradigms in business research: A philosophical reflection. *European Journal of Business and Management, 7*(3), 217–225.

Azmitia, M., Sumabat-Estrada, G., Cheong, Y., & Covarrubias, R. (2018). "Dropping out is not an option": How educationally resilient first-generation students see the future. *New Directions for Child and Adolescent Development, 2018*(160), 89–100.

Bachman DeSilva, M., Skalicky, A., Beard, J., Cakwe, M., Zhuwau, T., & Simon, J. (2012). Longitudinal evaluation of the psychosocial well-being of recent orphans compared with non-orphans in a school-attending cohort in KwaZulu-Natal, South Africa. *International Journal of Mental Health Promotion, 14*(3), 162–182.

Banyard, V., Hamby, S., & Grych, J. (2017). Health effects of adverse childhood events: Identifying promising protective factors at the intersection of mental and physical well-being. *Child Abuse & Neglect, 65*, 88–98.

Basias, N., & Pollalis, Y. (2018). Quantitative and qualitative research in business & technology: Justifying a suitable research methodology. *Review of Integrative Business and Economics Research, 7*(1) 91–105.

Bauer, J. M., & Sousa-Poza, A. (2015). Impacts of informal caregiving on caregiver employment, health, and family. *Journal of Population Ageing, 8*(3), 113–145.

Benson, S., Elkington, K. S., Leu, C.-S., Bucek, A., Dolezal, C., Warne, P., & Mellins, C. (2018). Association between psychiatric disorders, substance use, and sexual risk behaviors in perinatally HIV-exposed youth. *Journal of the Association of Nurses in AIDS Care, 29*(4), 538–549. doi:10.1016/j.jana.2018.02.006

Benzies, K., & Mychasiuk, R. (2009). Fostering family resiliency: A review of the key protective factors. *Child & Family Social Work, 14*(1), 103–114. doi:10.1111/j.1365-2206.2008.00586.x

Bertoni, A., Carrà, E., Iafrate, R., Zanchettin, A., & Parise, M. (2018). The associations for separated parents in Italy: Their role for parents' well-being and coparenting. *Health & Social Care in the Community, 26*(4), e571–e577. doi:10.1111/hsc.12573

Betancourt, T. S., McBain, R., Newnham, E. A., & Brennan, R. T. (2013). Trajectories of internalizing problems in war-affected Sierra Leonean youth: Examining conflict and postconflict factors. *Child development, 84*(2), 455–470.

Bhana, A., & Bachoo, S. (2011). The determinants of family resilience among families in low-and middle-income contexts: A systematic literature review. *South African journal of psychology, 41*(2), 131–139.

Bhana, A., Mellins, C. A., Small, L., Nestadt, D. F., Leu, C.-S., Petersen, I., . . . McKay, M. (2016). Resilience in perinatal HIV+ adolescents in South Africa. *AIDS Care, 28*(sup. 2), 49–59. doi:10.1080/09540121.2016.1176676

Bhana, D., & Pattman, R. (2011). Girls want money, boys want virgins: The materiality of love amongst South African township youth in the context of HIV and AIDS. *Culture, health & sexuality, 13*(8), 961-972.

Billups, F. (2014). The quest for rigor in qualitative studies: Strategies for institutional researchers. *The NERA Researcher, 52*(1), 1–5.

Bireda, A. D., & Pillay, J. (2018). Enhancing protective factors in South African adolescents affected by HIV/AIDS. *Vulnerable Children and Youth Studies, 13*(2), 183–194.

Black, K., & Lobo, M. (2008). A conceptual review of family resilience factors. *Journal of Family Nursing, 14*(1), 33–55. doi.org/10.1177/1074840707312237

Black, M. M., Walker, S. P., Fernald, L. C., Andersen, C. T., DiGirolamo, A. M., Lu, C., ... & Devercelli, A. E. (2017). Early childhood development coming of age: science through the life course. *The Lancet, 389*(10064), 77–90.

Bleidorn, W., Hopwood, C. J., & Lucas, R. E. (2016). Life events and personality trait change. *Journal of Personality, 86*(1), 83–96. doi:10.1111/jopy.12286

Bonanno, G. A., Romero, S. A., & Klein, S. I. (2015). The temporal elements of psychological resilience: An integrative framework for the study of individuals, families, and communities. *Psychological Inquiry, 26*(2), 139–169.

Borawski, E. A., Ievers-Landis, C. E., Lovegreen, L. D., & Trapl, E. S. (2003). Parental monitoring, negotiated unsupervised time, and parental trust: The role of perceived parenting practices in adolescent health risk behaviors. *Journal of Adolescent Health, 33*(2), 60–70.

Botha, F., Wouters, E., & Booysen, F. (2018). Happiness, socioeconomic status, and family functioning in South African households: A structural equation modelling approach. *Applied Research in Quality of Life, 13*(4), 947–989.

Bottrell, D. (2009). Dealing with disadvantage: Resilience and the social capital of young people's networks. *Youth & Society 40*, 476–501. doi:10.1177/0044118X08327518

Bradley, R. H., & Corwyn, R. F. (2002). Socioeconomic status and child development. *Annual review of psychology, 53*(1), 371–399.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology, 3*(2), 77–101.

Braun, V., & Clarke, V. (2012). Thematic analysis. In H. Cooper, P. M. Camic, D. L. Long, A. T. Panter, D. Rindskopf, & K. J. Sher (Eds.), *APA handbook of research*

methods in psychology, Vol. 2: Research designs: Quantitative, qualitative, neuropsychological, and biological (pp. 57–71). Washington, DC: American Psychological Association.

Braun, V., Clarke, V., Hayfield, N., & Terry, G. (2019). Thematic analysis. In P. Liamputtong (Ed.), *Handbook of research methods in health social sciences* (pp. 843–860). Singapore: Springer.

Brook, J. S., Brook, D. W., de la Rosa, M., Whiteman, M., & Montoya, I. D. (1999). The role of parents in protecting Colombian adolescents from delinquency and marijuana use. *Archives of pediatrics & adolescent medicine, 153*(5), 457–464.

Brook, J. S., Morojele, N. K., Pahl, K., & Brook, D. W. (2006). Predictors of drug use among South African adolescents. *Journal of adolescent health, 38*(1), 26-34.

Buckner, J. C., Mezzacappa, E. & Beardslee, W. R. (2003). Characteristics of resilient youth living in poverty: The role of the self-regulatory process. *Development and Psychopathology, 15*, 139–162. doi:10.1017.S0954579403000087

Burnette, C. E. (2018). Family and cultural protective factors as the bedrock of resilience and growth for Indigenous women who have experienced violence. *Journal of Family Social Work, 21*(1), 45–62.

Burnette, C. E., Boel-Studt, S., Renner, L. M., Figley, C. R., Theall, K. P., Miller Scarnato, J., & Billiot, S. (2019). The family resilience inventory: A culturally grounded measure of current and family-of-origin protective processes in Native American families. *Family Process*. doi:10.1111/famp.12423

Calafat, A., García, F., Juan, M., Becoña, E., & Fernández-Hermida, J. R. (2014). Which parenting style is more protective against adolescent substance use? Evidence within the European context. *Drug and alcohol dependence, 138*, 185-192. Doi:10.1016/j.drugalcdep.2014.02.705

Cameron, E. L., Fox, J. D., Anderson, M. S., & Cameron, C. A. (2010). Resilient youths use humor to enhance socioemotional functioning during a day in the life. *Journal of Adolescent Research, 25*(5), 716–742.

Carr, K., & Kellas, J. K. (2017). The role of family and marital communication in developing resilience to family-of-origin adversity. *Journal of Family Communication, 18*(1), 68–84. doi:10.1080/15267431.2017.1369415

Carver, H., Elliott, L., Kennedy, C., & Hanley, J. (2017). Parent–child connectedness and communication in relation to alcohol, tobacco and drug use in adolescence:

an integrative review of the literature. *Drugs: Education, Prevention and Policy, 24*(2), 119–133.

Casale, M. (2011). "I am living a peaceful life with my grandchildren. Nothing else." Stories of adversity and 'resilience' of older women caring for children in the context of HIV/AIDS and other stressors. *Ageing & Society, 31*(8), 1265–1288.

Case, R. J. L., Starkey, N. J., Jones, K., Barker-Collo, S., & Feigin, V. (2017). New Zealand teachers' understanding of childhood mild traumatic brain injury: investigating and enhancing teacher knowledge and practice. *New Zealand Journal of Educational Studies, 52*(1), 159–176.

Cavanagh, S. E., Stritzel, H., Smith, C., & Crosnoe, R. (2017). Family instability and exposure to violence in the early life course. *Journal of Research on Adolescence, 28*(2), 456–472. doi:10.1111/jora.12347

Census 2011. (n.d). Census 2011. Retrieved from https://census2011.adrianfrith.com/

Chakrapani, V., Newman, P. A., Shunmugam, M., Logie, C. H., & Samuel, M. (2017). Syndemics of depression, alcohol use, and victimisation, and their association with HIV-related sexual risk among men who have sex with men and transgender women in India. *Global public health, 12*(2), 250–265.

Chan, C. C., Shie, R. H., Chang, T. Y., & Tsai, D. H. (2006). Workers' exposures and potential health risks to air toxics in a petrochemical complex assessed by improved methodology. *International archives of occupational and environmental health, 79*(2), 135–142.

Chang, P. J., & Yarnal, C. (2018). The effect of social support on resilience growth among women in the Red Hat Society. *The Journal of Positive Psychology, 13*(1), 92–99.

Chen, H. G., Chen, C. C., Lo, L., & Yang, S. C. (2008). Online privacy control via anonymity and pseudonym: Cross-cultural implications. *Behaviour & Information Technology, 27*(3), 229–242.

Chen, P., Voisin, D. R., & Jacobson, K. C. (2016). Community violence exposure and adolescent delinquency: Examining a spectrum of promotive factors. *Youth & Society, 48*(1), 33–57.

Chen, Y.-C., & Fish, M. C. (2012). Parental involvement of mothers with chronic illness and children's academic achievement. *Journal of Family Issues, 34*(5), 583–606. doi:10.1177/0192513x12444081

Chew, J., Carpenter, J., & Haase, A. M. (2018). Young people's experiences of living with epilepsy: The significance of family resilience. *Social Work in Health Care, 57*(5), 332–354.

Cluver, L. D., Meinck, F., Steinert, J. I., Shenderovich, Y., Doubt, J., Romero, R. H., . . . & Nzima, D. (2018). Parenting for lifelong health: A pragmatic cluster randomised controlled trial of a non-commercialised parenting programme for adolescents and their families in South Africa. *BMJ Global Health, 3*(1), e000539.

Cluver, L., Meinck, F., Yakubovich, A., Doubt, J., Redfern, A., Ward, C., . . . Gardner, F. (2016). Reducing child abuse amongst adolescents in low- and middle-income countries: A pre-post trial in South Africa. *BMC Public Health, 16*(1). doi:10.1186/s12889-016-3262-z

Collishaw, S., Gardner, F., Aber, J. L., & Cluver, L. (2016). Predictors of mental health resilience in children who have been parentally bereaved by AIDS in urban South Africa. *Journal of Abnormal Child Psychology, 44*(4), 719–730.

Conger, K. J., Rueter, M. A., & Conger, R. D. (2000). The role of economic pressure in the lives of parents and their adolescents: The family stress model. In L. J. Crockett & R. K. Silbereisen (Eds.), *Negotiating adolescence in times of social change* (pp. 201-223). New York, NY: Cambridge University Press.

Conger, R. D., Ge, X., Elder Jr, G. H., Lorenz, F. O., & Simons, R. L. (1994). Economic stress, coercive family process, and developmental problems of adolescents. *Child development, 65*(2), 541–561.

Conger, R. D., Wallace, L. E., Sun, Y., Simons, R. L., McLoyd, V. C., & Brody, G. H. (2002). Economic pressure in African American families: A replication and extension of the family stress model. *Developmental Psychology, 38*(2), 179.

Connelly, L. M. (2016). Trustworthiness in qualitative research. *Medsurg Nursing, 25*(6), 435.

Cook, K. V. (2000). "You have to have somebody watching your back, and if that's God, then that's mighty big." The church's role in the resilience of inner-city youth. *Adolescence, 35*(140), 717–717.

Cortina, M. A., Stein, A., Kahn, K., Hlungwani, T. M., Holmes, E. A., & Fazel, M. (2016). Cognitive styles and psychological functioning in rural South African school students: Understanding influences for risk and resilience in the face of chronic adversity. *Journal of Adolescence, 49*, 38–46.

Costa, L. G., Cole, T. B., Coburn, J., Chang, Y. C., Dao, K., & Roqué, P. J. (2017). Neurotoxicity of traffic-related air pollution. *Neurotoxicology, 59*, 133–139.

Cox, R. S., Irwin, P., Scannell, L., Ungar, M., & Bennett, T. D. (2017). Children and youth's biopsychosocial wellbeing in the context of energy resource activities. *Environmental research, 158*, 499–507. doi.org/10.1016/j.envres.2017.07.014

Cozolino, L. (2014). *The neuroscience of human relationships: Attachment and the developing social brain.* New York, NY: Norton.

Crespo, C., Santos, S., Canavarro, M. C., Kielpikowski, M., Pryor, J., & Féres-Carneiro, T. (2013). Family routines and rituals in the context of chronic conditions: A review. *International Journal of Psychology, 48*(5), 729–746. doi.org/10.1080/00207594.2013.806811

Creswell, J. W., Hanson, W. E., Clark Plano, V. L., & Morales, A. (2007). Qualitative research designs: Selection and implementation. *The Counseling Psychologist, 35*(2), 236–264.

Crone, E. A., Peters, S., & Steinbeis, N. (2017). Executive function development in adolescence. In S. A. Wiebe & J. Karback (Eds.), *Executive function* (pp. 58–72). New York, NY: Routledge.

Curtin, L., Massey, C., & Keefe, S. E. (2017). Intergenerational and familial influences on mental illness in rural settings and their relevance for school mental health. In L. Curtin (Ed.), *Handbook of rural school mental health* (pp. 275–288). Cham, Switzerland: Springer.

Cutchin, M. P., Martin, K. R., Owen, S. V., & Goodwin, J. S. (2008). Concern about petrochemical health risk before and after a refinery explosion. *Risk Analysis, 28*(3), 589–601, doi:10.1111/j.1539-6924.2008.01050.x

Cutter, S. L. (2016). The landscape of disaster resilience indicators in the USA. *Natural Hazards, 80*(2), 741–758.

Danhoundo, G., & Khanlou, N. (2017). Family ties and mental health of orphans in Ouagadougou (Burkina Faso). Does the gender of the dead parent matter? *International Journal of Mental Health and Addiction, 15*(4), 753–765.

Daniels, J., Struthers, H., Lane, T., Maleke, K., McIntyre, J., & Coates, T. (2018). "Booze is the main factor that got me where I am today": Alcohol use and HIV risk for MSM in rural South Africa. *AIDS Care, 30*(11), 1–7. doi:10.1080/09540121.2018.1475626

Darawsheh, W. (2014). Reflexivity in research: Promoting rigour, reliability and validity in qualitative research. *International Journal of Therapy and Rehabilitation, 21*(12), 560–568.

Dass-Brailsford, P. (2005). Exploring resiliency: Academic achievement among disadvantaged black youth in South Africa:'general'section. *South African Journal of Psychology, 35*(3), 574–591.

Davey, M. P., Duncan, T. M., Foster, J., & Milton, K. (2008). Keeping the family in focus at an HIV/AIDS pediatric clinic. *Families, Systems & Health, 26*(3), 350–355. doi:10.1037/a0013056

Davids, E. L., Roman, N. V., & Leach, L. (2015). The effect of family structure on decision making, parenting styles and healthy lifestyle behaviour of adolescents in rural South Africa. *African Journal for Physical Health Education, Recreation and Dance, 21*(3.2), 953–967.

Deaton, A. S., & Paxson, C. H. (1998). Aging and inequality in income and health. *The American Economic Review, 88*(2), 248–253.

Deist, M., & Greeff, A. P. (2014). Resilience in families caring for a family member diagnosed with dementia. *Educational Gerontology, 41*(2), 93–105. doi:10.1080/03601277.2014.942146

Demaray, M. K., & Malecki, C. K. (2002). The relationship between perceived social support and maladjustment for students at risk. *Psychology in the Schools, 39*(3), 305-316.

Denov, M., Fennig, M., Rabiau, M. A., & Shevell, M. C. (2019). Intergenerational resilience in families affected by war, displacement, and migration: "It runs in the family." *Journal of Family Social Work, 22*(1), 17–45.

Department of Social Development. (2012). *White Paper on families in South Africa.* Pretoria, South Africa: Department of Social Development. Retrieved from: http://www.dsd.gov.za/index.php?option=com_docman&task=cat_view&gid=33&Itemid=39

Desmond, N., Allen, C. F., Clift, S., Justine, B., Mzugu, J., Plummer, M. L., . . . Ross, D. A. (2005). A typology of groups at risk of HIV/STI in a gold mining town in north-western Tanzania. *Social Science & Medicine, 60*(8), 1739–1749.

DeVore, E. R., & Ginsburg, K. R. (2005). The protective effects of good parenting on adolescents. *Current Opinion in Pediatrics, 17*(4), 460–465.

Diab, M., Peltonen, K., Qouta, S. R., Palosaari, E., & Punamäki, R. L. (2015). Effectiveness of psychosocial intervention enhancing resilience among war-affected children and the moderating role of family factors. *Child Abuse & Neglect, 40*, 24–35.

Dias, P. C., & Cadime, I. (2017). Protective factors and resilience in adolescents: The mediating role of self-regulation. *Psicologia Educativa, 23*(1), 37–43.

Distelberg, B., Martin, A., Torres, J., Foster, L., Kramer, K., & Lloyd, G. (2018). Multidimensional resilience: Predictive and construct validity of the individual, family, and community resilience profile. *Marriage & Family Review, 54*(5), 459–485.

Dolbin-MacNab, M. L., & Yancura, L. A. (2018). International perspectives on grandparents raising grandchildren: Contextual considerations for advancing global discourse. *International Journal of Aging and Human Development, 86*(1), 3–33. doi:10.1177/0091415016689565

Downey, L., Crowder, K., & Kemp, R. J. (2017). Family structure, residential mobility, and environmental inequality. *Journal of Marriage and Family, 79*(2), 535–555.

Driessnack, M., & Furukawa, R. (2011). Arts-based data collection techniques used in child research. *Journal for Specialists in Pediatric Nursing, 17*(1), 3–9. doi:10.1111/j.1744-6155.2011.00304.x

Dubow, E. F., Boxer, P., Huesmann, L. R., Shikaki, K., Landau, S., Gvirsman, S. D., & Ginges, J. (2010). Exposure to conflict and violence across contexts: Relations to adjustment among Palestinian children. *Journal of Clinical Child and Adolescent Psychology, 39*, 103–116.

Duh, H. I., Benmoyal-Bouzaglo, S., Moschis, G. P., & Smaoui, L. (2014). Examination of young adults' materialism in france and south africa using two life-course theoretical perspectives. *Journal of Family and Economic Issues, 36*(2), 251–262. doi:10.1007/s10834-014-9400-9

Earnshaw, V. A., Kidman, R. C., & Violari, A. (2018). Stigma, depression, and substance use problems among perinatally HIV-infected youth in South Africa. *AIDS and Behavior, 22*(12), 3892-3896. doi:10.1007/s10461-018-2201-7

Ebersöhn, L. (2008). Children's resilience as assets for safe schools. *Journal of Psychology in Africa, 18*(1), 11–17.

Ebersöhn, L. (2012). Adding "flock" to "fight and flight": A honeycomb of resilience where supply of relationships meets demand for support. *Journal of Psychology in Africa, 22*(1), 29–42.

Ebersöhn, L., Eloff, I., Finestone, M., Van Dullemen, I., Sikkema, K., & Forsyth, B. (2012). Drawing on resilience: Piloting the utility of the Kinetic Family Drawing to measure resilience in children of HIV-positive mothers. *South African Journal of Education, 32*(4), 331–348.

Ebersöhn, L., Eloff, I., & Swanepoel-Opper, A. (2010). "Memory boxes" as tool for community-based volunteers. *Education as Change, 14*(S1), S73–S84.

Ebersöhn, L., & Ferreira, R. (2011). Coping in an HIV/AIDS-dominated context: Teachers promoting resilience in schools. *Health Education Research, 26*(4), 596–613.

Ebersohn, L., & Ferreira, R. (2012). Rurality and resilience in education: Place-based partnerships and agency to moderate time and space constraints. *Perspectives in Education, 30*(1), 30–42.

Ebersöhn, L., & Malan-van Rooyen, M. (2018). Making the most of culture and context. *International Journal of Qualitative Methods, 17*(1). doi:10.1177/1609406918798434

Ebersöhn, L., & Maree, J. G. (2006). Demonstrating resilience in a HIV & AIDS context: An emotional intelligence perspective. *Gifted Education International, 22*(1), 14–30.

Ebersöhn, L., Nel, M., & Loots, T. (2017). Analysing risk and resilience in the first sand tray of youth at a rural school. *The Arts in Psychotherapy, 55*, 146–157.

Edelman, N. L., de Visser, R. O., Mercer, C. H., McCabe, L., & Cassell, J. A. (2015). Targeting sexual health services in primary care: A systematic review of the psychosocial correlates of adverse sexual health outcomes reported in probability surveys of women of reproductive age. *Preventive Medicine, 81*, 345–356.

Eggerman, M., & Panter-Brick, C. (2010). Suffering, hope, and entrapment: Resilience and cultural values in Afghanistan. *Social Science & Medicine, 71*(1), 71–83.

Engward, H., & Davis, G. (2015). Being reflexive in qualitative grounded theory: discussion and application of a model of reflexivity. *Journal of Advanced Nursing, 71*(7), 1530–1538.

Ennis, G. M., Kirshbaum, M., & Waheed, N. (2018). The energy-enhancing potential of participatory performance-based arts activities in the care of people with a diagnosis of cancer: An integrative review. *Arts & Health*, 1–17.

Evans, R. M. (2005). Social networks, migration, and care in Tanzania: Caregivers' and children's resilience to coping with HIV/AIDS. *Journal of Children and Poverty, 11*(2), 111–129.

Farinpour, R., Miller, E. N., Satz, P., Selnes, O. A., Cohen, B. A., Becker, J. T., . . . Visscher, B. R. (2003). Psychosocial risk factors of HIV morbidity and mortality: Findings from the Multicenter AIDS Cohort Study (MACS). *Journal of Clinical and Experimental Neuropsychology, 25*(5), 654–670.

Fayyad, J., Cordahi-Tabet, C., Yeretzian, J., Salamoun, M., Najm, C., & Karam, E. G. (2017). Resilience-promoting factors in war-exposed adolescents: An epidemiologic study. *European Child & Adolescent Psychiatry, 26*(2), 191–200.

Fazel, M., Reed, R. V., Panter-Brick, C., & Stein, A. (2012). Mental health of displaced and refugee children resettled in high-income countries: Risk and protective factors. *The Lancet, 379*(9812), 266–282. doi:10.1016/S0140-6736(11)60051-2

Feder, A., Nestler, E. J., & Charney, D. S. (2009). Psychobiology and molecular genetics of resilience. *Nature Reviews Neuroscience, 10*(6), 446–457. doi:10.1038/nrn2649

Fernando, F. N., & Cooley, D. R. (2016). Socioeconomic system of the oil boom and rural community development in western North Dakota. *Rural Sociology, 81*(3), 407–444.

Fiese, B. H., Tomcho, T. J., Douglas, M., Josephs, K., Poltrock, S., & Baker, T. (2002). A review of 50 years of research on naturally occurring family routines and rituals: Cause for celebration? *Journal of Family Psychology, 16*(4), 381–390. doi:10.1037/0893-3200.16.4.381

Finan, L. J., Schulz, J., Gordon, M. S., & Ohannessian, C. M. (2015). Parental problem drinking and adolescent externalizing behaviors: The mediating role of family functioning. *Journal of Adolescence, 43*, 100–110.

Finkelman, R. B., Orem, W., Castranova, V., Tatu, C. A., Belkin, H. E., Zheng, B., . . . Bates, A. L. (2002). Health impacts of coal and coal use: Possible solutions. *International Journal of Coal Geology, 50*(1/4), 425–443.

Fletcher, A. C., Walls, J. K., Cook, E. C., Madison, K. J., & Bridges, T. H. (2008). Parenting style as a moderator of associations between maternal disciplinary strategies and child well-being. *Journal of Family Issues, 29*(12), 1724–1744.

Flynn, S. V., & Korcuska, J. S. (2018). Credible phenomenological research: A mixed-methods study. *Counselor Education and Supervision, 57*(1), 34–50.

Fonseca, G., Crespo, C., McCubbin, L. D., & Relvas, A. P. (2017). Validation study of the Portuguese version of the Family Problem Solving Communication (FPSC) Index. *Journal of Child and Family Studies, 27*(4), 1088–1097. doi:10.1007/s10826-017-0974-3

Fowler, P. J., Tompsett, C. J., Braciszewski, J. M., Jacques-Tiura, A. J., & Baltes, B. B. (2009). Community violence: A meta-analysis on the effect of exposure and mental health outcomes of children and adolescents. *Development and psychopathology, 21*(1), 227–259.

Gahnström-Strandqvist, K., Liukko, A., & Tham, K. (2003). The meaning of the working cooperative for persons with long-term mental illness: A phenomenological study. *American Journal of Occupational Therapy, 57*(3), 262–272.

Gerard, J. M., & Buehler, C. (1999). Multiple risk factors in the family environment and youth problem behaviors. *Journal of Marriage and the Family, 61*(2) 343–361.

Gibson, C. B. (2017). Elaboration, generalization, triangulation, and interpretation: On enhancing the value of mixed method research. *Organizational Research Methods, 20*(2), 193–223.

Givropoulou, D., & Tseliou, E. (2018). Moving between dialogic reflexive processes in systemic family therapy training: An interpretative phenomenological study of trainees' experience. *Journal of marital and family therapy, 44*(1), 125–137.

Glenton, C., Carlsen, B., Lewin, S., Munthe-Kaas, H., Colvin, C. J., Tunçalp, Ö., . . . Rashidian, A. (2018). Applying GRADE-CERQual to qualitative evidence synthesis findings—Paper 5: How to assess adequacy of data. *Implementation Science, 13*(1), 14.

Goel, K. S., Amatya, K., Jones, R. T., & Ollendick, T. H. (2014). Child and adolescent resiliency following a residential fire: The role of social support and ethnicity. *Journal of Child and Family Studies, 23*(3), 537–547. doi:10.1007/s10826-013-9715-4

Goldenberg, S. M., Shoveller, J. A., Koehoorn, M., & Ostry, A. S. (2010). And they call this progress? Consequences for young people of living and working in resource-extraction communities. *Critical Public Health, 20*(2), 157–168.

Gonzalez, A. (2017). *The effect of parenting styles on academic self-effficacy, resilience, and help seeking* (Master's thesis). Retrieved from https://digitalcommons.cwu.edu/cgi/viewcontent.cgi?referer=https://scholar.googl e.co.za/&httpsredir=1&article=1604&context=etd

Goodman, E. (1999). The role of socioeconomic status gradients in explaining differences in US adolescents' health. *American Journal of Public Health, 89*(10), 1522–1528.

Greeff, A. P., & Loubser, K. (2008). Spirituality as a resiliency quality in Xhosa-speaking families in South Africa. *Journal of Religion and Health, 47*(3), 288–301.

Greeff, A. P., & Nolting, C. (2013). Resilience in families of children with developmental disabilities. *Families, Systems, & Health, 31*(4), 396–405. doi:10.1037/a0035059

Greeff, A. P., & van der Merwe, S. (2004). Variables associated with resilience in divorced families. *Social Indicators Research, 68*(1), 59–75. doi:10.1023/b:soci.0000025569.95499.b

Green, A., & Denov, M. (2019). Mask-making and drawing as method: Arts-based approaches to data collection with war-affected children. *International Journal of Qualitative Methods*, *18*. doi:10.1177/1609406919832479

Green, D. (2013, November 26). Gert Sibande District leads with HIV prevalence. *Ridge Times.* Retrieved from https://ridgetimes.co.za/8497/council-prepares-of-word-aids-day/

Green, D (2018, September 10). Locals concern about the violence in eMbalenhle. *Ridge Times.* Retrieved from https://ridgetimes.co.za/123391/locals-concern-about-the-violence-in-emba/

Green, T. L. (2016). From positivism to critical theory: school-community relations toward community equity literacy*. International Journal of Qualitative Studies in Education*, 257–258. doi:10.1080/09518398.2016.1253892

Greig, A., MacKay, T., & Ginter, L. (2019). Supporting the mental health of children and young people: a survey of Scottish educational psychology services. *Educational Psychology in Practice,* 1-14.

Guba, E. G., & Lincoln, Y. S. (1985). *Naturalistic inquiry*. Newbury Park, CA: SAGE.

Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (pp. 105–116). Thousand Oaks, CA: SAGE.

Guo, L., Yuan, P., Song, Y., Peng, J., & Wang, L. (2011, June). *Case study and environmental risk assessment of the petrochemical industry*. Paper presented a the International Conference on Remote Sensing, Environment and Transportation Engineering (RSETE)*.* doi:10.1109/RSETE.2011.5965668

Haffejee, S., & Theron, L. (2017). Contextual risks and resilience enablers in South Africa. In G. J. Rich & S. Sirikantraporn (Eds.), *Human strengths and resilience: Developmental, cross-cultural, and international perspectives*, (pp. 87–100). London, UK: Lexington Books.

Haimes, Y. Y. (2009). On the complex definition of risk: A systems-based approach. *Risk Analysis, 29*(12), 1647–1654.

Hair, E. C., Moore, K. A., Garrett, S. B., Ling, T., & Cleveland, K. (2008). The continued importance of quality parent–adolescent relationships during late adolescence. *Journal of Research on Adolescence, 18*(1), 187–200.

Hall, A. M., & Theron, L. C. (2016). Resilience processes supporting adolescents with intellectual disability: A multiple case study. *Intellectual and Developmental Disabilities, 54*(1), 45–62.

Hanson, T. L., McLanahan, S. S., & Thomson, E. (1998). Windows on divorce: Before and After. *Social Science Research, 27*, 329–349.

Henderson, D. A., & Thompson, C. L. (2000). Counselling children with special concerns. In L. Schreiber-Ganster (Ed.), *Counselling children* (pp. 629–662). Belmont, CA: Brooks/Cole Cengage Learning.

Hendryx, M. (2009). Mortality from heart, respiratory, and kidney disease in coal mining areas of Appalachia. *International Archives of Occupational and Environmental Health, 82*(2), 243–249.

Hendryx, M. (2013). Personal and family health in rural areas of Kentucky with and without mountaintop coal mining. *The Journal of Rural Health, 29*(s1). doi:10.1111/jrh.12016

Henman, L. D. (2001). Humor as a coping mechanism: Lessons from POWs. *Humor: International Journal of Humor Research, 14*(1). Retrieved from https://www.deepdyve.com/lp/de-gruyter/humor-as-a-coping-mechanism-lessons-from-pows-9iF9FCi5aq

Hennink, M., Hutter, I., & Bailey, A. (2010). *Qualitative research methods*. London, UK: SAGE.

Henry, C. S., Hubbard, R. L., Struckmeyer, K. M., & Spencer, T. A. (2018). Family resilience and caregiving. In R. L. Hubbard, K. M. Struckmeyer, T. A. Spencer (Eds.), *Family caregiving* (pp. 1–26). Cham, Switzerland: Springer.

Henry, C. S., Sheffield Morris, A., & Harrist, A. W. (2015). Family resilience: Moving into the third wave. *Family Relations, 64*(1), 22–43.

Hernández, P. (2002). Resilience in families and communities: Latin American contributions from the psychology of liberation*. The Family Journal, 10*(3), 334–343.

Herrera, E. K., Flannery, A., & Krimmer, M. (2017). Risk and resilience analysis for highway assets. Transportation research record: *Journal of the Transportation Research Board, 2604*, 1–8. doi:10.3141/2604-01

Herrero Romero, R., Hall, J., Cluver, L., & Meinck, F. (2018). Can supportive parenting protect against school delay amongst violence-exposed adolescents in South Africa? *Child Abuse & Neglect, 78*, 31–45. doi:10.1016/j.chiabu.2017.09.025

Hill, M. S., Yeung, W. J., & Duncan, G. J. (2001). Childhood family structure and young adults' behaviours. *Journal of Population Economics, 14*, 271–310.

Hirschson, S., Fritz, E., & Kilian, D. (2018). The tree of life as a metaphor for grief in AIDS-orphaned adolescents. *American Journal of Dance Therapy, 40*(1), 87–109.

Hobfoll, S. E., Stevens, N. R., & Zalta, A. K. (2015). Expanding the science of resilience: Conserving resources in the aid of adaptation. *Psychological Inquiry, 26*(2), 174–180. doi:10.1080/1047840x.2015.1002377

Hogain, D. O. C. (2018). Mixed methods research: A methodology in social sciences research for the construction manager. In L. Scott (Ed.), *ARCOM doctoral workshop research methodology* (pp. 55–70). Dublin, Ireland: Dublin Institute of Technology.

Holtrop, K., McNeil Smith, S., & Scott, J. C. (2014). Associations between positive parenting practices and child externalizing behavior in underserved Latino immigrant families. *Family Process, 54*(2), 359–375. doi:10.1111/famp.12105

Huang, J., Nam, Y., Sherraden, M., & Clancy, M. (2019). Impacts of child development accounts on parenting practices: Evidence from a randomised

statewide experiment. *Asia Pacific Journal of Social Work and Development*, 1–14. doi.org/10.1080/02185385.2019.1575270

Idemudia, U., & Ite, U. E. (2006). Demystifying the Niger Delta conflict: Towards an integrated explanation. *Review of African Political Economy, 33*(109), 391–406.

Idowu, O. E. (2017). Positivism versus interpretivism: Fire-war on the methodological approach in the study of organisational culture. *International Journal of Human Resource Studies, 6*(4), 178–187.

Imegi, J. C., & Wali, A. F. (2017). Reflecting on the debates and action of mixed methods adoption in business research: Researchers should start thinking. *International Journal of Management Excellence, 9*(3), 1140–1145.

Isaacs, S. A., Roman, N. V., & Savahl, S. (2017). An exploration of the family resilience needs of a rural community in South Africa: A sequential explanatory mixed methodological study design. *Current Psychology*, 1–15. doi.org/10.1007/s12144-017-9722-5

Jakob, P. (2018). Multi-stressed families, child violence and the larger system: An adaptation of the nonviolent model. *Journal of Family Therapy, 40*(1), 25–44.

James, C., Drake, J. E., & Winner, E. (2018). Expression versus distraction: An investigation of contrasting emotion regulation strategies when drawing, writing, talking, and thinking. *Empirical Studies of the Arts, 36*(2), 162–179.

Jansen, J. D. (2013). The language of research. In K. Maree (Ed.), *First steps in research (*Revised ed., pp. 15–20). Pretoria, South Africa: van Schaik.

Javaid, M. U., Isha, A. S. N., Ghazali, Z., & Langove, N. (2015, August). *Psychosocial risks: Health and wellbeing of workers in petrochemical industry of Malaysia*. Paper presented at the International Symposium on Technology Management and Emerging Technologies (ISTMET)*,* Langkawai Island, Malaysia. doi:10.1109/ISTMET.2015.7359050

Jeanes, E. (2017). Are we ethical? Approaches to ethics in management and organisation research. *Organization, 24*(2), 174–197.

Jefferis, T. C. (2016). *Resilient black South African girls in contexts of adversity: A participatory visual study* (Unpublished doctoral dissertation). North-West University, South Africa.

Jeon, L., Buettner, C. K., & Hur, E. (2014). Family and neighborhood disadvantage, home environment, and children's school readiness. *Journal of Family Psychology, 28*(5), 718–727.

Joe, J. R., Heard, N. J., & Yurcisin, K. (2017). Counseling students' perceived challenges for self and families with members living with HIV/AIDS. *Journal of Family Psychotherapy, 29*(2), 161–180. doi:10.1080/08975353.2017.1395255

Joel, S., Eastwick, P. W., & Finkel, E. J. (2018). Open sharing of data on close relationships and other sensitive social psychological topics: Challenges, tools, and future directions. *Advances in Methods and Practices in Psychological Science, 1*(1), 86–94.

Johnson, S., & Rasulova, S. (2017). Qualitative research and the evaluation of development impact: Incorporating authenticity into the assessment of rigour. *Journal of Development Effectiveness, 9*(2), 263–276.

Johnston, M. P. (2017). Secondary data analysis: A method of which the time has come. *Qualitative and Quantitative Methods in Libraries, 3*(3), 619–626.

Jonker, L., & Greeff, A. P. (2009). Resilience factors in families living with people with mental illnesses. *Journal of Community Psychology, 37*(7), 859–873.

Juang, L. P., & Silbereisen, R. K. (2002). The relationship between adolescent academic capability beliefs, parenting and school grades. *Journal of Adolescence, 25*(1), 3–18.

Jürgens, U., Donaldson, R., Rule, S., & Bähr, J. (2013). Townships in South African cities–literature review and research perspectives. *Habitat International, 39*, 256-260.

Kalichman, S. C., Simbayi, L. C., Kagee, A., Toefy, Y., Jooste, S., Cain, D., & Cherry, C. (2006). Associations of poverty, substance use, and HIV transmission risk behaviors in three South African communities. *Social Science & Medicine, 62*(7), 1641-1649.

Kalomo, E. N., & Liao, M. (2018). Burden of care among caregivers of persons living with HIV/AIDS in rural Namibia: Correlates and outcomes. *Social Work in Public Health, 33*(1), 70–84. doi:10.1080/19371918.2017.1415180

Kazi, Z., Kazi, L., Filip, S. & Radulovic, B. (2012). Temporal analysis of air pollution data by using olap cube. *Metalurgia International, 17*(3), 110–115.

Kern, F. G. (2018). The trials and tribulations of applied triangulation: weighing different data sources. *Journal of Mixed Methods Research, 12*(2), 166–181.

Khotimah, K. (2012). Analysis of Indonesian affixes in English words found in mobile guide edition. *Lantern (Journal on English Language, Culture and Literature), 1*(2), 54–59.

Kichler, J. C., & Kaugars, A. S. (2015). Topical review: Applying positive development principles to group interventions for the promotion of family resilience in paediatric psychology. *Journal of pediatric psychology, 40*(9), 978–980.

Kritzas, N., & Grobler, A. A. (2005). The relationship between perceived parenting styles and resilience during adolescence. *Journal of Child and Adolescent Mental Health, 17*(1), 1–12.

Kumpfer, K. L. (1999). Outcome measures of interventions in the study of children of substance-abusing parents. *Pediatrics, 103*(2), 1128–1128.

Kyngäs, H. (2004). Support network of adolescents with chronic disease: Adolescents' perspective. *Nursing & Health Sciences, 6*(4), 287–293.

Labella, M. H., & Masten, A. S. (2018). Family influences on the development of aggression and violence. *Current Opinion in Psychology, 19*, 11–16. doi:10.1016/j.copsyc.2017.03.028

Lachman, J. M., Cluver, L. D., Boyes, M. E., Kuo, C., & Casale, M. (2013). Positive parenting for positive parents: HIV/AIDS, poverty, caregiver depression, child behavior, and parenting in South Africa. *AIDS Care, 26*(3), 304–313. doi:10.1080/09540121.2013.825368

Lavy, V., Ebenstein, A., & Roth, S. (2014). *The impact of short term exposure to ambient air pollution on cognitive performance and human capital formation* (No. w20648). National Bureau of Economic Research. Retrieved from https://econpapers.repec.org/paper/nbrnberwo/20648.htm

Lee, E. S., & Kang, S. J. (2017). The lives of refugee children: A Korean example. In L. Miller, C. Cameron, C. Dalli, & N. Barbour (Eds.), *The SAGE handbook of early childhood policy* (pp. 467–475). London, UK: SAGE.

Lee, I. H., Rojewski, J. W., Gregg, N., & Jeong, S.-O. (2014). Postsecondary education persistence of adolescents with specific learning disabilities or emotional/behavioral disorders. *The Journal of Special Education, 49*(2), 77–88. doi:10.1177/0022466914524826

Lemay Jr, E. P., Clark, M. S., & Greenberg, A. (2010). What is beautiful is good because what is beautiful is desired: Physical attractiveness stereotyping as projection of interpersonal goals. *Personality and Social Psychology Bulletin, 36*(3), 339–353.

Li, H., Bottrell, D., & Armstrong, D. (2017). Understanding the pathways to resilience. *YOUNG, 26*(2), 126–144. doi:10.1177/1103308817711532

Liebenberg, L., & Theron, L. C. (2015). Innovative qualitative explorations of culture and resilience. In L. C. Theron, I. Liebenberg, & M. Ungar (Eds.), *Youth resilience and culture* (pp. 203–215). Dordrecht, Netherlands: Springer.

Lin, C. M., Li, C. Y., & Mao, I. F. (2004). Increased risks of term low-birth-weight infants in a petrochemical industrial city with high air pollution levels. *Archives of Environmental Health: An International Journal, 59*(12), 663–668.

Lind, M. J., Brown, R. C., Sheerin, C. M., York, T. P., Myers, J. M., Kendler, K. S., & Amstadter, A. B. (2018). Does parenting influence the enduring impact of severe childhood sexual abuse on psychiatric resilience in adulthood? *Child Psychiatry & Human Development, 49*(1), 33–41.

Lindsay, D. S. (2017). Sharing data and materials in psychological science. *Psychological Science, 28*(6), 699–702. doi: 10.1177/0956797617704015

Lorenzo, G. L., Biesanz, J. C., & Human, L. J. (2010). What is beautiful is good and more accurately understood: Physical attractiveness and accuracy in first impressions of personality. *Psychological Science, 21*(12), 1777–1782.

Lou, Y., Taylor, E. P., & Di Folco, S. (2018). Resilience and resilience factors in children in residential care: A systematic review. *Children and Youth Services Review.* doi.org/10.1016/j.childyouth.2018.04.010

Lumbroso, D., Suckall, N., Nicholls, R., & White, K. (2017). *Are there lessons that can be learnt from Bangladesh and Cuba that can increase American coastal communities' resilience to flooding?* Retrieved from http://eprints.hrwallingford.co.uk/1418/

Lunn Brownlee, J., Curtis, E., Spooner-Lane, R., & Feucht, F. (2017). Understanding children's epistemic beliefs in elementary education. *Education 3–13, 45*(2), 191–208.

Lys, C., Gesink, D., Strike, C., & Larkin, J. (2018). Body mapping as a youth sexual health intervention and data collection tool. *Qualitative Health Research, 28*(7), 1185–1198. doi:10.1177/1049732317750862

MacBlain, S. (2018). *Learning theories for early years practice* (Urie Bronfenbrenner: Learning in the wider context, pp. 66–69). London, UK: SAGE.

MacGeorge, E. L., Guntzviller, L. M., Hanasono, L. K., & Feng, B. (2016). Testing advice response theory in interactions with friends. *Communication Research, 43*(2), 211–231.

Maina, G., Sutankayo, L., Chorney, R., & Caine, V. (2014). Living with and teaching about HIV: Engaging nursing students through body mapping. *Nurse Education Today, 34*(4), 643–647.

Makiwane, M., Gumede, N. A., Makoae, M., & Vawda, M. (2017). Family in a changing South Africa: Structures, functions and the welfare of members. *South African Review of Sociology, 48*(2), 49–69.

Malaquias, S., Crespo, C., & Francisco, R. (2014). How do adolescents benefit from family rituals? Links to social connectedness, depression and anxiety. *Journal of Child and Family Studies, 24*(10), 3009–3017. doi:10.1007/s10826-014-0104-4

Malindi, M. J. (2014). Exploring the roots of resilience among female street-involved children in South Africa. *Journal of Psychology, 5*(1), 35–45.

Malindi, M. J. (2018). Personal and socio-ecological resilience resources among school-going teenage mothers: An exploratory study. *Journal of Psychology in Africa, 28*(4), 340–343. doi:10.1080/14330237.2018.1501883

Malindi, M. J., & MacHenjedze, N. (2012). The role of school engagement in strengthening resilience among male street children. *South African Journal of Psychology, 42*(1), 71–81. doi:10.1177/008124631204200108

Malindi, M. J., & Theron, L. C. (2010). The hidden resilience of street youth. *South African Journal of Psychology, 40*(3), 318–326.

Mampane, M. R. (2014). Factors contributing to the resilience of middle-adolescents in a South African township: Insights from a resilience questionnaire. *South African Journal of Education, 34*(4).

Mampane, R. (2012). Psychometric properties of a measure of resilience among middle-adolescents in a South African setting. *Journal of Psychology in Africa, 22*(3), 405–408.

Mampane, R., & Bouwer, C. (2011). The influence of township schools on the resilience of their learners. *South African Journal of Education, 31*,114–126.

Maree, K. (2007). *First steps in research*. Pretoria, South Africa: van Schaik.

Marine, W. M., Gurr, D., & Jacobsen, M. (1988). Clinically important respiratory effects of dust exposure and smoking in British coal miners. *American Journal of Respiratory and Critical Care Medicine, 137*(1), 106–112.

Marteleto, L. J., Cavanagh, S., Prickett, K., & Clark, S. (2016). Instability in parent-child coresidence and adolescent development in urban South Africa. *Studies in Family Planning, 47*(1), 19–38. doi:10.1111/j.1728-4465.2016.00048.x

Martin, R. A., Kuiper, N. A., Olinger, L. J., & Dance, K. A. (1993). Humor, coping with stress, self-concept, and psychological well-being. *Humor: International Journal of Humor Research, 6*(1), 89-104. http://dx.doi.org/10.1515/humr.1993.6.1.89

Masten, A. S. (2014). Global perspectives on resilience in children and youth. *Child development, 85*(1), 6–20.

Masten, A. S. (2016). Resilience in the context of ambiguous loss: A commentary. *Journal of Family Theory & Review, 8*(3), 287–293.

Masten, A. S. (2018). Resilience theory and research on children and families: Past, present, and promise. *Journal of Family Theory & Review.* doi:10.1111/jftr.12255Masten, A. S., Cutuli, J. J., Herbers, J. E., & Reed, M. G. (2009). Resilience in Development. In C. R. Snyder & S. J. Lopez (Eds.), *The Oxford handbook of positive psychology* (pp. 117–120). New York, NY: Oxford University Press.

Masten, A. S., Hubbard, J. J., Gest, S. D., Tellegen, A., Garmezy, N., & Ramirez, M. (1999). Competence in the context of adversity: Pathways to resilience and maladaptation from childhood to late adolescence. *Development and psychopathology, 11*(1), 143–169.

Masten, A. S., & Monn, A. R. (2015). Child and family resilience: A call for integrated science, practice, and professional training. *Family Relations, 64*(1), 5–21. doi:10.1111/fare.12103

Mathebula, S. (2016, January 14). Unemployed protest against Sasol. *Ridge Times.* Retrieved from https://ridgetimes.co.za/52427/unemployed-protest-against-sasol/

Mathebula, S. (2016, January 22). Police escort illegal protesters. *Ridge Times.* Retrieved from https://ridgetimes.co.za/52738/police-escourt-illegal-protest/

Mathebula, S. (2017, July 12). Protesters shut down the R50 road over unfulfilled job promises. *Ridge Times.* Retrieved from https://ridgetimes.co.za/93149/breaking-news-ext-8-residents-shut-r50-road-unfulfilled-job-promises/

Mathebula, S. (2018, February 8). Sasol apparently not formally informed of today's protest. *Ridge Times.* Retrieved from https://ridgetimes.co.za/108152/violence-erupts-embalenhle-protest-sasol/

Mathebula, S. (2018, May 13). Locals concerned over gangs in eMbalenhle. *Ridge Times*. Retrieved from https://ridgetimes.co.za/114549/locals-concerned-over-gangs/

Mativenga, P. T., & Marnewick, A. (2018). Water quality in a mining and water-stressed region. *Journal of Cleaner Production, 171*, 446–456.

Mayaba, N. N., & Wood, L. (2015). The value of using folktales as an intervention tool to enhance resilience for children orphaned and rendered vulnerable by HIV and AIDS. *Education as Change, 19*(1), 10–35.

McDonald, M., McCormack, D., Avdagic, E., Hayes, L., Phan, T., & Dakin, P. (2019). Understanding resilience: Similarities and differences in the perceptions of children, parents and practitioners. *Children and Youth Services Review, 99*, 270–278.

McKenzie, J., & Chataika, T. (2018). Supporting families in raising disabled children to enhance African child development. In K. Runswick-Cole, T. Curran, & K. Liddiard (Eds.), *The Palgrave handbook of disabled children's childhood studies* (pp. 315–332). London, UK: Palgrave Macmillan.

McLaughlin, J. M. (2001, December). *Accommodating perceptions, searching for authenticity and decolonising methodology: The case of the Australia/Papua New Guinea secondary school students' project*. Paper presented at the 29th ANZCIES conference, Curtin University of Technology, Perth, Australia.

Medin, D., Ojalehto, B., Marin, A., & Bang, M. (2017). Systems of (non-)diversity. *Nature Human Behaviour, 1*(5), Art. 0088.

Milevsky, A., Schlechter, M., Netter, S., & Keehn, D. (2007). Maternal and paternal parenting styles in adolescents: Associations with self-esteem, depression and life-satisfaction. *Journal of Child and Family Studies, 16*(1), 39–47.

Misselhorn, A. (2018, June 26). Provincial police commissioner warns that violence and destruction will not be tolerated. *Ridge Times.* Retrieved from https://ridgetimes.co.za/118415/provincial-police-commissioner-warns-violence-destruction-will-not-tollerated/

Mohamed, S., & Thomas, M. (2017). The mental health and psychological well-being of refugee children and young people: An exploration of risk, resilience and protective factors. *Educational Psychology in Practice, 33*(3), 249–263.

Moiloa, T. Z. (2009). *Breaking the circle of commercial sex workers* (Unpublished doctoral dissertation). University of Stellenbosch, South Africa.

Molnar, B. E., Gortmaker, S. L., Bull, F. C., & Buka, S. L. (2004). Unsafe to play? Neighborhood disorder and lack of safety predict reduced physical activity among urban children and adolescents. *American Journal of Health Promotion, 18*(5), 378–386.

Moreira, M. C., Galindo, V., & García, A. O. (2019). Motivation to achievement in adolescents: Differences in sexes between public and private high schools. *Universal Journal of Psychology 7*(1), 18–28

Morris, R., & Atkinson, C. (2018). How can educational psychologists work within further education to support young people's mental health? An appreciative inquiry. *Research in Post-Compulsory Education, 23*(3), 285-313.

Morse, J. M. (2015). Critical analysis of strategies for determining rigor in qualitative inquiry. *Qualitative health research, 25*(9), 1212-1222.

Motha, K. C. (2018). Educational support for orphaned children: What can we learn from the African extended family structure? *Children & Society, 32*(1), 50–60.

Motseke, M. J. (2005). OBE: Implementation problems in the black townships of South Africa. *Interim: Interdisciplinary Journal, 4*(2), 113-121.

Mukhopadhyay, A. K. (2016). Systems psyche: Its structure, operation and possible molecular links. *Abnormal and Behavioural Psychology*, *2*. doi:10.4172/2472-0496.1000121

Muzik, M., Rosenblum, K. L., Alfafara, E. A., Schuster, M. M., Miller, N. M., Waddell, R. M., & Kohler, E. S. (2015). Mom power: Preliminary outcomes of a group intervention to improve mental health and parenting among high-risk mothers. *Archives of women's mental health, 18*(3), 507–521.

Nduna, M., & Sikweyiya, Y. (2015). Silence in young women's narratives of absent and unknown fathers from Mpumalanga Province, South Africa. *Journal of Child and Family Studies, 24*(2), 536–545.

Neuman, W., L. (2003). *Social research methods: Qualitative and quantitative approaches* (5th ed.). Boston, MA: Allyn & Bacon.

Newton, V. L. (2017). "It's good to be able to talk": An exploration of the complexities of participant and researcher relationships when conducting sensitive research. *Women's Studies International Forum, 61*, 93–99

Ngai, S., Cheung, C., To, S., Liu, Y., & Song, H. (2013). Parent–child relationships, friendship networks, and developmental outcomes of economically

disadvantaged youth in Hong Kong. *Children & Youth Services Review, 35*(1), 91–101. doi:10.1016/j.childyouth.2012.09.025

Ngulube, P., & Ngulube, B. (2017). Application and contribution of hermeneutic and eidetric phenomenology to indigenous knowledge research. In P. Ngulube (Ed.), *Handbook of research on theoretical perspectives on indigenous knowledge systems in developing countries* (pp. 127–143). Hershey, PA: IGI Global.

Okoji, M. A. (2002). Social implications of the petroleum oil industry in the Niger Delta. *International Journal of Environmental Studies, 59*(2), 197–210.

O'Mahony, T. (2017). The impact of a constructivist approach to assessment and feedback on student satisfaction and learning: A case-study. *AISHE-J: The All Ireland Journal of Teaching and Learning in Higher Education, 9*(2).

O'Neill, C., McCaughan, E., Semple, C. J., & Ryan, A. (2018). Fathers' experiences of living with cancer: A phenomenological study*. European Journal of Cancer Care, 27*(1).

Ong, A. D., Zautra, A. J., & Reid, M. C. (2010). Psychological resilience predicts decreases in pain catastrophizing through positive emotions. *Psychology and Aging, 25*(3), 516–523.

Oosthuizen, J. (2015, April 8). Sasol gives R950k to community care programme. *Ridge Times.* Retrieved from https://ridgetimes.co.za/33867/sasol-and-ngo-join-hands/

O'Rourke, D., & Connolly, S. (2003). Just oil? The distribution of environmental and social impacts of oil production and consumption. *Annual Review of Environment and Resources, 28*(1), 587–617.

Osofsky, J. D. (2018). Commentary: Understanding the impact of domestic violence on children, recognizing strengths, and promoting resilience—reflections on Harold and Sellers (2018). *Journal of Child Psychology and Psychiatry, 59*(4), 403–404.

Osuji, H. L., Nabunya, P., Byansi, W., Parchment, T. M., Ssewamala, F., McKay, M. M., & Huang, K. Y. (2018). Social support and school outcomes of adolescents orphaned and made vulnerable by HIV/AIDS living in South Western Uganda. *Vulnerable Children and Youth Studies 13*(3), 228–238.

Ozer, E. J., Lavi, I., Douglas, L., & Wolf, J. P. (2017). Protective factors for youth exposed to violence in their communities: A review of family, school, and

community moderators. *Journal of Clinical Child & Adolescent Psychology, 46*(3), 353–378.

Pangborn, S. M. (2019). Narrative resources amid unspeakable grief: Teens foster connection and resilience in family storytelling. *Journal of Family Communication, 19*(2), 95–109.

Panter-Brick, C., & Eggerman, M. (2012). Understanding culture, resilience, and mental health: The production of hope. In M. Eggerman (Ed.), *The social ecology of resilience* (pp. 369–386). New York, NY: Springer.

Panter-Brick, C., Goodman, A., Tol, W. A., & Eggerman, M. (2011). Mental health and childhood adversities: A longitudinal study of school children in Kabul, Afghanistan. *Journal of the American Academy of Child and Adolescent Psychiatry, 50*, 349–363.

Panter-Brick, C., Hadfield, K., Dajani, R., Eggerman, M., Ager, A., & Ungar, M. (2018). Resilience in context: A brief and culturally grounded measure for Syrian refugee and Jordanian host-community adolescents. *Child development, 89*(5), 1803–1820.

Patterson, J. M. (2002a). Integrating family resilience and family stress theory. *Journal of Marriage and Family, 64*(2), 349–360.

Patterson, J. M. (2002b). Understanding family resilience. *Journal of Clinical Psychology, 58*(3), 233–246.

Pedersen, C. R., & Madsen, M. (2002). Parents' labour market participation as a predictor of children's health and wellbeing: A comparative study in five Nordic countries. *Journal of Epidemiology & Community Health, 56*(11), 861–867.

Perreira, K. M., Marchante, A. N., Schwartz, S. J., Isasi, C. R., Carnethon, M. R., Corliss, H. L., . . . Delamater, A. M. (2019). Stress and resilience: Key correlates of mental health and substance use in the Hispanic Community Health Study of Latino Youth. *Journal of Immigrant and Minority Health, 21*(1), 4–13.

Petersen, I., Bhana, A., & McKay, M. (2005). Sexual violence and youth in South Africa: The need for community-based prevention interventions. *Child Abuse & Neglect, 29*(11), 1233–1248. doi:10.1016/j.chiabu.2005.02.012

Petersen, I., Bhana, A., Myeza, N., Alicea, S., John, S., Holst, H., . . . Mellins, C. (2010). Psychosocial challenges and protective influences for socio-emotional coping of HIV+ adolescents in South Africa: A qualitative investigation. *AIDS care, 22*(8), 970–978.

Phasha, T. N. (2010). Educational resilience among African survivors of child sexual abuse in South Africa. *Journal of Black Studies, 40*(6), 1234–1253.

Pittman, L. D., & Chase-Lansdale, P. L. (2001). African American adolescent girls in impoverished communities: Parenting style and adolescent outcomes. *Journal of Research on Adolescence, 11*(2), 199–224.

Pretorius, T., & Theron, L. (2018). 'A Pillar of Strength' Empowering Women and the Resilience of Township-Dwelling Adolescents. *YOUNG 27*(4), 1-22. doi.org/10.1177/1103308818795081

Prioste, A., Narciso, I., Gonçalves, M. M., & Pereira, C. R. (2015). Family relationships and parenting practices: A pathway to adolescents' collectivist and individualist values? *Journal of Child and Family Studies, 24*(11), 3258–3267.

Rabe, M. (2008). Can the "African household" be presented meaningfully in large-scale surveys? *African Sociological Review, 12*(2), 167–181.

Racz, S. J., & McMahon, R. J. (2011). The relationship between parental knowledge and monitoring and child and adolescent conduct problems: A 10-year update. *Clinical Child and Family Psychology Review, 14*(4), 377–398. doi:10.1007/s10567-011-0099-y

Ramos, A. C. (2017). Piecing together ideas on sociocultural psychology and methodological approaches. *Integrative Psychological and Behavioral Science, 51*(2), 279–284.

Raniga, T., & Mthembu, M. (2017). Family resilience in low income communities: A case study of an informal settlement in KwaZulu-Natal, *South Africa. International Journal of Social Welfare, 26*(3), 276–284.

Rapaport, C., Hornik-Lurie, T., Cohen, O., Lahad, M., Leykin, D., & Aharonson-Daniel, L. (2018). The relationship between community type and community resilience. *International Journal of Disaster Risk Reduction, 31*, 470–477.

Rathebe, R. (2018, May 15). Locals still fighting for jobs. *The Bulletin.* Retrieved from http://thebulletin.co.za/2018/05/15/locals-still-fighting-for-jobs/

Rawatlal, N., Kliewer, W., & Pillay, B. J. (2015). Adolescent attachment, family functioning and depressive symptoms. *South African Journal of Psychiatry, 21*(3), 6. doi:10.4102/sajpsychiatry.v21i3.672

Reich, J. W., Zautra, A. J., & Hall, J. S. (Eds.). (2010). *Handbook of adult resilience.* New York, NY: Guilford Press.

Richards, M. H., Larson, R., Miller, B. V., Luo, Z., Sims, B., Parrella, D. P., & McCauley, C. (2004). Risky and protective contexts and exposure to violence in urban African American young adolescents. *Journal of Clinical Child and Adolescent Psychology, 33*(1), 138–148.

Riggenbach, A., Goubert, L., van Petegem, S., & Amouroux, R. (2019). Topical review: Basic psychological needs in adolescents with chronic pain—a self-determination perspective. *Pain Research and Management, 2019*, 1–12. doi:10.1155/2019/8629581

Riley, J. R., & Masten, A. S. (2005). Resilience in context. In R. Peters, B. Leadbeater, & R. J. MacMahon (Eds.), *Resilience in children, families, and communities* (pp. 13–25). Boston, MA: Springer.

Ritchie, J. (2003). The applications of qualitative methods to social research. In J. Ritchie & J. Lewis (Eds.), *Qualitative research practice: A guide for social science students and researchers* (pp. 24–38). London, UK: SAGE.

Ritter, E. N. (2005). *Parenting styles: Their impact on the development of adolescent resiliency* (Unpublished doctoral dissertation). Capella University, Minnesota.

Rohani, A., Keramati, A., & Razmi, J. (2017). Combining of PCA and ANP methods to identify and prioritize water pollutants and employing mathematical model to reduce environmental risks emphasis in petroleum and petrochemical industries. *Bulgarian Chemical Communications, 49*, 229–242,

Runswick-Cole, K., Goodley, D., & Lawthom, R. (2018). Resilience in the lives of disabled children: A many splendoured thing. In D. Goodley & R. Lawthom (Eds.), *The Palgrave handbook of disabled children's childhood studies* (pp. 425–442). London, UK: Palgrave Macmillan.

RYSE. (n.d). *About the project.* Retrieved from http://ryseproject.org/about/

Sasol. (2012). *Sasol inaugurates new mining shaft in Mpumalanga*. Retrieved from http://www.sasol.com/media-centre/media-releases/sasol-inaugurates-new-mining-shaft-mpumalanga

Sawyer, S. M., Azzopardi, P. S., Wickremarathne, D., & Patton, G. C. (2018). The age of adolescence. *The Lancet Child & Adolescent Health, 2*(3), 223–228.

Schaan, V. K., & Vögele, C. (2016). Resilience and rejection sensitivity mediate long-term outcomes of parental divorce. *European Child & Adolescent Psychiatry, 25*(11), 1267–1269. doi:10.1007/s00787-016-0893-7

Schmitt, S. A., Finders, J. K., & McClelland, M. M. (2015). Residential mobility, inhibitory control, and academic achievement in preschool. *Early Education and Development, 26*(2), 189–208.

Schoon, I., Parsons, S., & Sacker, A. (2004). Socioeconomic adversity, educational resilience, and subsequent levels of adult adaptation. *Journal of Adolescent Research, 19*(4), 383–404.

Scorgie, F., Baron, D., Stadler, J., Venables, E., Brahmbhatt, H., Mmari, K., & Delany-Moretlwe, S. (2017). From fear to resilience: Adolescents' experiences of violence in inner-city Johannesburg, South Africa. *BMC public health, 17*(3), 441.

Seabi, J (2012). Research designs and data collection techniques In J. G. Maree (Ed.), *Complete your thesis or dissertation successfully: Practical guidelines* (pp. 81–93). Cape Town, South Africa: Juta.

Segal-Caspi, L., Roccas, S., & Sagiv, L. (2012). Don't judge a book by its cover, revisited: Perceived and reported traits and values of attractive women. *Psychological Science, 23*(10), 1112–1116.

Sharp, C., Penner, F., Marais, L., & Skinner, D. (2019). School connectedness as psychological resilience factor in children affected by HIV/AIDS. *AIDS Care 30*(4), 34–41. doi:10.1080/09540121.2018.1511045

Shenton, A. K. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information, 22*(2), 63–75.

Siegel, D. J. (2012). *Pocket guide to interpersonal neurobiology: An integrative handbook of the mind* (Norton series on interpersonal neurobiology). New York, NY: Norton.

Silverman, M. N., & Deuster, P. A. (2014). Biological mechanisms underlying the role of physical fitness in health and resilience. *Interface Focus, 4*(5). doi:10.1098/rsfs.2014.0040

Simões, C., Matos, M. G., & Morgan, A. (2015). Facing the adversity: The role of internal assets on well-being in adolescents with special needs. *The Spanish Journal of Psychology, 18*. doi:10.1017/sjp.2015.41

Singh, K (2007). *Quantitative social research methods*. New Delhi, India: SAGE.

Siu, A. M., & Shek, D. T. (2005). Psychometric properties of the Chinese Family Assessment Instrument in Chinese adolescents in Hong Kong. *Adolescence, 40*(160), 817–830.

Skovdal, M., Ogutu, V. O., Aoro, C., & Campbell, C. (2009). Young carers as social actors: Coping strategies of children caring for ailing or ageing guardians in Western Kenya. *Social Science & Medicine, 69*(4), 587–595.

Smilan, C. (2009). Building resiliency to childhood trauma through arts-based learning. *Childhood Education, 85*(6), 380–384. doi:10.1080/00094056.2009.10521405

Smokowski, P. R., Reynolds, A. J., & Bezruczko, N. (1999). Resilience and protective factors in adolescence: An autobiographical perspective from disadvantaged youth. *Journal of School Psychology, 37*(4), 425–448.

Sonuga-Barke, E. J. (2019). "It's a family affair": The social drivers of child and adolescent resilience. *Journal of Child Psychology and Psychiatry, 60*(1), 1–3.

Southwick, S. M., Bonanno, G. A., Masten, A. S., Panter-Brick, C., & Yehuda, R. (2014). Resilience definitions, theory, and challenges: Interdisciplinary erspectives. *European Journal of Psychotraumatology, 5*(1), Art. 25338. doi:10.3402/ejpt.v5.25338

Spagnola, M., & Fiese, B. H. (2007). Family routines and rituals: A context for development in the lives of young children. *Infants & Young Children, 20*(4), 284–299.

Spera, C. (2005). A review of the relationship among parenting practices, parenting styles, and adolescent school achievement. *Educational Psychology Review, 17*(2), 125–146.

Stats SA. (2018). *Marriages and divorces 2015*. Statistics South Africa. Retrieved from http://www.statssa.gov.za/publications/P0307/P03072015.pdf

Staub, E. (2003). Notes on cultures of violence, cultures of caring and peace, and the fulfillment of basic human needs. *Political psychology, 24*(1), 1-21.

Steven M. Southwick, George A. Bonanno, Ann S. Masten, Catherine Panter- Brick & Rachel Yehuda (2014) Resilience definitions, theory, and challenges: interdisciplinary perspectives, *European Journal of Psychotraumatology, 5*(1), 25338. doi:10.3402/ejpt.v5.25338

Strachan, L., Côté, J., & Deakin, J. (2011). A new view: Exploring positive youth development in elite sport contexts. *Qualitative Research in Sport, Exercise and Health, 3*(1), 9–32. doi:10.1080/19398441.2010.541483

Strayer, D. L., D'Antonio, C. M., Essl, F., Fowler, M. S., Geist, J., Hilt, S., . . . Jeschke, J. M. (2017). Boom-bust dynamics in biological invasions: Towards an improved

application of the concept. *Ecology letters 20*(10), 1337–1350. doi:10.1111/ele.12822

TakingITGlobal. (n.d.). *Malaika orphanage*. Retrieved from: https://orgs.tigweb.org/malaika-orphanage-

Thabethe, N. D. L., Engelbrecht, J. C., Wright, C. Y., & Oosthuizen, M. A. (2014). Human health risks posed by exposure to PM10 for four life stages in a low socio-economic community in South Africa. *The Pan African Medical Journal, 18.* doi:10.11604/pamj.2014.18.206.3393

Thabethe, N., Mbatha, Z., & Mtapuri, O. (2016). School-based programmes as a new form of the family for orphans and vulnerable children in the province of Kwazulu-Natal, South Africa. *Journal of Comparative Family Studies, 47*(3), 357–368.

Theron, L. C. (2007). Uphenyo ngokwazi kwentsha yasemalokishini ukumelana nesimo esinzima: A South African study of resilience among township youth*. Child and Adolescent Psychiatric Clinics, 16*(2), 357–375.Theron, L. C. (2016a). Researching resilience: Lessons learned from working with rural, Sesotho-speaking South African young people. *Qualitative Research*. doi:10.1177/1468794116652451

Theron, L. C. (2016b). Toward a culturally and contextually sensitive understanding of resilience: Privileging the voices of black, South African young people. *Journal of Adolescent Research, 31*(6), 635–670.

Theron, L. C. (2017a). Adolescent versus adult explanations of resilience enablers: A South African study. *Youth & Society.* doi:0044118X17731032

Theron, I. C. (2017b). Using research to influence policy and practice: The case of the Pathways-to-Resilience study (South Africa). In A. Abubakar & F. van de Vijver (Eds.), *Handbook of applied developmental science in Sub-Saharan Africa* (pp. 373–387). New York, NY: Springer.

Theron, L. C., & Donald, D. R. (2013). Educational psychology and resilience in developing contexts: A rejoinder to Toland and Carrigan (2011). *School Psychology International, 34*(1), 51–66.

Theron, L., & Dunn, N. (2010). Enabling white, Afrikaans-speaking adolescents towards post-divorce resilience: implications for educators. *South African Journal of Education, 30*(2), 231–244.

Theron, L., Liebenberg, L., & Malindi, M. (2014). When schooling experiences are respectful of children's rights: A pathway to resilience. *School Psychology International, 35*(3), 253–265.

Theron, L., Liebenberg, L., & Ungar, M. (Eds.). (2015). *Youth resilience and culture.* Dordrecht, Netherlands: Springer.

Theron, L. C., & Malindi, M. J. (2010). Resilient street youth: A qualitative South African study. *Journal of Youth Studies, 13*(6), 717–736.

Theron, L. C., & Theron, A. (2010). A critical review of studies of South African youth resilience, 1990–2008. *South African Journal of Science, 106*(7/8), 1–8.

Theron, L. C., Theron, A. M., & Malindi, M. J. (2013). Toward an African definition of resilience: A rural South African community's view of resilient Basotho youth. *Journal of Black Psychology, 39*(1), 63–87.Theron, L., & van Rensburg, A. (2018). Resilience over time: Learning from school-attending adolescents living in conditions of structural inequality. *Journal of Adolescence, 67,* 167–178. doi:10.1016/j.adolescence.2018.06.012

Thompson, M. J., Au, A., Laver-Bradbury, C., Lange, A. M., Tripp, G., Shimabukuro, S., . . . & Sonuga-Barke, E. J. (2017). Adapting an attention-deficit hyperactivity disorder parent training intervention to different cultural contexts: The experience of implementing the New Forest Parenting Programme in China, Denmark, Hong Kong, Japan, and the United Kingdom. *PsyCh Journal, 6*(1), 83–97.

Toland, J., & Carrigan, D. (2011). Educational psychology and resilience: New concept, new opportunities. *School Psychology International, 32*(1), 95–106.

Toska, E., Cluver, L. D., Boyes, M. E., Isaacsohn, M., Hodes, R., & Sherr, L. (2017). School, supervision and adolescent-sensitive clinic care: Combination social protection and reduced unprotected sex among HIV-positive adolescents in South Africa. *AIDS and Behavior, 21*(9), 2746–2759.

Tugade, M. M., Fredrickson, B. L., & Feldman Barrett, L. (2004). Psychological resilience and positive emotional granularity: Examining the benefits of positive emotions on coping and health. *Journal of personality, 72*(6), 1161–1190.

Tuli, F. (2010). The basis of distinction between qualitative and quantitative research in social science: Reflection on ontological, epistemological and methodological perspectives. *Ethiopian Journal of Education and Sciences, 6*(1).

Twistdraai Coal Mine, South Africa. (n.d.). *Mining Technology.* Retrieved from https://www.mining-technology.com/projects/twistdraai/

Ukeje, C. (2001). Youths, violence and the collapse of public order in the Niger Delta of Nigeria. *Africa Development/Afrique et Développement, 26*(1/2), 337–366.

Ungar, M. (2004). The importance of parents and other caregivers to the resilience of high-risk adolescents. *Family Process, 43*(1), 23–41.

Ungar, M. (2008). Resilience across cultures. *The British Journal of Social Work, 38*(2), 218–235.

Ungar, M. (2011). The social ecology of resilience: Addressing contextual and cultural ambiguity of a nascent construct. *American Journal of Orthopsychiatry, 81*(1), 1–17. doi:10.1111/j.1939-0025.2010.01067.x

Ungar, M. (2015). Practitioner review: Diagnosing childhood resilience—a systemic approach to the diagnosis of adaptation in adverse social and physical ecologies. *Journal of Child Psychology and Psychiatry, 56*(1), 4–17. doi:10.1111/jcpp.12306

Ungar, M., Brown, M., Liebenberg, L., & Othman, R. (2007). Unique pathways to resilience across cultures. *Adolescence, 42*(166), 287–310.

Ungar, M., Connelly, G., Liebenberg, L., & Theron, L. (2017). How schools enhance the development of young people's resilience. *Social Indicators Research*, 1–13. doi:10.1007/s11205-017-1728-8

Ungar, M., Ghazinour, M., & Richter, J. (2013). Annual research review: What is resilience within the social ecology of human development? *Journal of Child Psychology and Psychiatry, 54*(4), 348–366.

Vagle, M. D. (2018). *Crafting phenomenological research* (2nd ed.). New York, NY: Routledge.

van Breda, A. D. (2017a). A comparison of youth resilience across seven South African sites. *Child & Family Social Work, 22*(1), 226–235. doi:10.1111/cfs.12222

van Breda, A. D. (2017b). The Youth Ecological-Resilience Scale: A partial validation. *Research on Social Work Practice, 27*(2), 248–257.

van Breda, A. D., & Theron, L. C. (2018). A critical review of South African child and youth resilience studies, 2009–2017. *Children and Youth Services Review, 91*, 237–247. doi:10.1016/j.childyouth.2018.06.022

van Niekerk, W. (2017). From technology transfer to participative design: A case study of pollution prevention in South African townships. *Journal of Energy in Southern Africa, 17*(3), 58–64.

van Oerle, S., Mahr, D., & Lievens, A. (2016). Coordinating online health communities for cognitive and affective value creation. *Journal of Service Management, 27*(4), 481–506.

van Rensburg, A., Theron, L., & Rothmann, S. (2015). A review of quantitative studies of South African youth resilience: Some gaps. *South African Journal of Science, 111*(7/8), 1–9.

van Rensburg, A. C., Theron, L. C., & Rothmann, S. (2018). Adolescent perceptions of resilience-promoting resources: The South African Pathways to Resilience Study. *South African Journal of Psychology, 48*(1), 73–85.

Vermeulen, T., & Greeff, A. P. (2015). Family resilience resources in coping with child sexual abuse in South Africa. *Journal of Child Sexual Abuse, 24*(5), 555–571. doi:10.1080/10538712.2015.1042183

Vesely, C. K., Letiecq, B. L., & Goodman, R. D. (2017). Immigrant family resilience in context: Using a community-based approach to build a new conceptual model. *Journal of Family Theory & Review, 9*(1), 93–110.

Walsh, F. (1996). The concept of family resilience: Crisis and challenge. *Family Process, 35*(3), 261–281. doi:10.1111/j.1545-5300.1996.00261.x

Walsh, F. (2002). A family resilience framework: Innovative practice applications. *Family Relations, 51*(2), 130–137.

Walsh, F. (2003). Family resilience: A framework for clinical practice. *Family Process, 42*(1), 1–18.

Walsh, F. (2015). *Strengthening family resilience*. New York, NY: Guilford Press.

Walsh, F. (2016). Family resilience: a developmental systems framework. *European Journal of Developmental Psychology, 13*(3), 313–324.

Wang, M. P., Chu, J. T., Viswanath, K., Wan, A., Lam, T. H., & Chan, S. S. (2015). Using information and communication technologies for family communication and its association with family well-being in Hong Kong: FAMILY project. *Journal of Medical Internet Research, 17*(8). doi:10.2196/jmir.4722

Wang, W., Xiao, C., Yao, X., Yang, Y., Yan, H., & Li, S. (2018). Psychosocial health and suicidal ideation among people living with HIV/AIDS: A cross-sectional study in Nanjing, China. *PloS One, 13*(2), e0192940.

Water, T., Wrapson, J., Tokolahi, E., Payam, S., & Reay, S. (2017). Participatory art-based research with children to gain their perspectives on designing healthcare environments. *Contemporary Nurse*, 1–18. doi:10.1080/10376178.2017.1339566

Waxman, H. C., & Huang, S. Y. L. (1996). Motivation and learning environment differences in inner-city middle school students. *The Journal of Educational Research, 90*(2), 93–102.

Werner, E. E. (2004). Journeys from childhood to midlife: Risk, resilience, and recovery. *Pediatrics, 114*(2), 492–492.

White, N., van der Walt, A., Ravenscroft, G., Roberts, W., & Ehrlich, R. (2009). Meteorologically estimated exposure but not distance predicts asthma symptoms in schoolchildren in the environs of a petrochemical refinery: A cross-sectional study. *Environmental Health, 8*(1), 1–10.

Wijesekera, K., Emerson, N. D., Cortez, M. S., Alejos, J., & Lester, P. (2017). FOCUS for pediatric heart transplant: A trauma-informed, family-centered, resilience enhancing intervention. *The Journal of Heart and Lung Transplantation, 36*(4), S175.

Wijesinghe, M. S. (2012). *From interpretivism to positivism: A methodological approach to the research in human resource management (HRM)*. Paper presented at the 8th International Conference on Business Management, University of Sri Jayewardenepura, Sri Lanka. Retrieved from http://journals.sjp.ac.lk/index.php/icbm/issue/view/20

Wild, L. G. (2018). Grandparental involvement and South African adolescents' emotional and behavioural health: A summary of research findings. *Contemporary Social Science, 13*(2), 232–245.

Wild, L. G., Flisher, A. J., & Lombard, C. (2004). Suicidal ideation and attempts in adolescents: associations with depression and six domains of self-esteem. *Journal of adolescence, 27*(6), 611-624.

Wilder, J., & Granlund, M. (2014). Stability and change in sustainability of daily routines and social networks in families of children with profound intellectual and multiple disabilities. *Journal of Applied Research in Intellectual Disabilities, 28*(2), 133–144. doi:10.1111/jar.12111

Williams, E., Dingle, G. A., Jetten, J., & Rowan, C. (2019). Identification with arts-based groups improves mental wellbeing in adults with chronic mental health conditions. *Journal of Applied Social Psychology, 49*(1), 15–26.

Wilson, A. (2015). A guide to phenomenological research. *Nursing Standard, 29*(34), 38–43.

Wilson, E., Kenny, A., & Dickson-Swift, V. (2018). Ethical challenges of community based participatory research: exploring researchers' experience. *International Journal of Social Research Methodology, 21*(1), 7–24.

Wong, P., Liamputtong, P., Koch, S., & Rawson, H. (2019). The impact of social support networks on family resilience in an Australian intensive care unit: A constructivist grounded theory. *Journal of Nursing Scholarship, 51*(1), 68–80.

Woods, K. (2016). The role and perspectives of practitioner educational psychologists. In L. Peer & G. Reid (Eds.), *Special educational needs: A guide for inclusive practice*, (pp. 255–272. Los Angeles, CA: SAGE.

Ye, M., Ollington, N., & De Salas, K. (2016). A methodological review of exploring Turner's three-process theory of power and the social identity approach. *Qualitative Sociology Review, 12*(4), 120–137.

Zegeye, E. A., Mbonigaba, J., & Kaye, S. B. (2017). HIV-positive pregnant women attending the prevention of mother-to-child transmission of HIV/AIDS (PMTCT) services in Ethiopia: Economic productivity losses across urban-rural settings. *Psychology, Health & Medicine, 23*(5), 525–531. doi:10.1080/13548506.2017.1360469

Zhai, Y., Liu, K., Zhang, L., Gao, H., Chen, Z., Du, S., . . . & Guo, Y. (2015). The relationship between post-traumatic symptoms, parenting style, and resilience among adolescents in Liaoning, China: A cross-sectional study. *PloS One, 10*(10), e0141102.

Zhang, Y., & Wildemuth, B. M. (2016). Qualitative analysis of content. In B. M. Wildemuth (Ed.), *Applications of social research methods to questions in information and library science* (pp. 323–324). Santa Barbara, CA: Libraries Unlimited.

Zolkoski, S. M., Bullock, L. M., & Gable, R. A. (2016). Factors associated with student resilience: Perspectives of graduates of alternative education programs. *Preventing School Failure: Alternative Education for Children and Youth, 60*(3), 231–243.

7.   ADDENDA

7.1   ADDENDUM A: RECRUITMENT FLYER

Looking for volunteers

Are you:

- **15-24** years old,

- Living in **the Secunda area**, Mpumalanga,

- **affected (negatively or positively)** by the **petrochemical industry** and

- OK speaking, writing and reading **English**?

Do you want to spend time **helping researchers** learn about **what helps young people** in communities affected by the petrochemical industry **to do OK in life**?

**If you answered yes to all of the above, please ask the person who gave you this advert
for more information about the research project.**

7.2   ADDENDUM B: AUDIT TRAIL

Excerpts illustrating the process of open coding

Research question: How do families facilitate the resilience of young people residing in a community challenged by risks associated with the petrochemical industry?

Group 1
Activity 1: Bodymapping

F: What do you mean when you say you have the basics?

BLESSED: By basics ne, I'm saying I have food, I have shelter, I have clothes, because my parents or my brother, they work at Sasol, they are able to provide all of those things for me, because of Sasol. Ja! That is what I mean by basics. Basically. Ja. I am a dreamer ne, but then, can I, am I able to dream outside of my comfort zone which is where I live, am I able to go outside, because what they teach me I know it takes me to school, I can go to school, I can study physics, you know, I can study maths, I can get a learner ship and go to Sasol, be an engineer, be an artisan, ne, earn a lot of money, but then is it outside of my comfort zone, am I able to go as far as I want to go? I don't know, because I grew up here. I was born here, I was born to it and there's nothing I can do to change it. I mean if you can look at the situation and, if someone gave you this preposition, and was like um, I give you this opportunity to own Sasol, t own this whole industry, would you say no?

F: How do you feel the petrochemical industry or Sasol, not even how do you think but how do you feel it's affected your community?

ZENANDE: how do I think it's [Sasol] affected- It's affected my community positively because everyone has been able to take care of their family.

F: In what way? Care of their families in what way?

ZENANDE: Salaries.

F: in terms of finances?

ZENANDE: In terms of finances. Money. But then affected us negatively too because a lot of people had to.

F: And you also have no mentioned family, which is fine, just out of curiosity do you believe your family helps or doesn't help?

Activity 2: Draw, write and talk

ZENANDE: My family helps. It does help because most of my family members are working at Sasol and I see the good that Sasol brings to them. It created jobs for them, it helps the support their family, my family and yes.

F: So your family doesn't necessarily help you then? You would rather say that Sasol is helping your family?

BLESSED: well, okay. My family. My family helping me deal with Sasol. Okay the only y they are helping me to deal with Sasol is that they are able to go in there and bring something since I can't.

F: in what sense? Bring something is what sense?

BLESSED: In what sense, it's that I have my brothers, my sister all actually work at Sasol , so they're able to bring something back home, something I can look at, you know something I can say, my sister worked there and she bought me this. She was at Sasol, she inhaled all the toxins but then she got me this.

SAMMY: I am Sammy, 18 of age , I'm a boy. I drew myself surrounded by love and attention. What makes me to be okay is the love, I guess of my family, friends. That's it.

F: Love is what sense? How would you describe love, in an example maybe?

SAMMY: Attention maybe.

F: do you think family, now in your group role. Do any of you think family plays a role in making him and other young people okay?

HAPPINESS: Yes. His parents are in the bus. He is basically going to provide for his family.

DANNY: ja!

F: Do you think the family supports him in any other way? Maybe emotionally, what do you think?

BLESSED: Financially

Group 2
Activity 1: Bodymapping

F: tell us your story about how the petrochemical industry affects your well-being. How does it affect your mind, your body, your heart. Where in your heart, where in your body, how, where does it affect you. P2: well living in this kinda place, well its oh sorry,

F: speak louder so that they can also hear your

Andy: but I can't speak loud, eish. Ok living in this area is, it has, it has affected me in a bad way, coz like as Sasol, it although it has brought us uhm job opportunities, like for our parents and for our and for us but at the same time it has affected as in bad ways coz it has polluted our areas and there is always that bad smell that causes headaches, a battle, it also causes sinus problems for me.

Activity 2: Draw, write and talk

F: Thank you. Andy for you what or who makes it possible for young people to be ok when the petrochemical industry affects their lives in a negative way.

Andy: Personally I am saying that what affects me is that I am working on getting out of here, like I want to get out of here. I don't want to live here. I am working towards that. I don't see myself here in the near future, that's what I am saying. Like, what makes it ok are my sisters, they are like my everything to me. Even

though they disrespect me sometimes but they know that I put them first. I know that everything that I do I think of them first because they are all I have. Ya

F: What it ok to live in this petrochemical even though there are negative effects and who?

Gugu: ok mina, I am talking about myself as Gugu, I developed myself from a young age, from grade 5 I already knew what I wanted to do. I knew my path. At home they raised us like at. At home, ok at home know works at Sasol. Everyone at home works but no one works at Sasol. My father obviously he owns taxi's he takes people from Sasol and all ut he [Father] motivates us each and every day, he does not want us ending up at Sasol. He he, see. Ok let me start with me, at home like if at you home there want to see you elsewhere, they [family] want you to a doctor or something, they won't let you go to Sasol, right.

P: ok, what…Its family and the community, the people that I am surrounded with. It goes with who you surround yourself with first, you can't surround yourself with people who will end up here, those who don't see the future. If you know, if you surround yourself with people here obviously you will end up being in the same level as them. They say you are the people that you hang out with. As much as you can say that hai no I am not like them, you will end up being like them. With me, they also ask that if we are friends what are you benefiting from your friends [yes] as much as we are friends what are we benefiting. For me, all my friends know I love to motivate people, and I always have this thing that I am going to leave, I am going to leave Embalenhle obviously, but the problem about leaving is that you are leaving your family and siblings behind, what are you going to come back and do for them, do you understand [um um] I want to have organisations ere, I want to have businesses here, I want to take other people out of here, because we grew up under difficulties, why can't we make it easier for other people.

F: just a quick one, in term of family, the question was not specific…how do you think the family plays a role in making it ok. Does the family influence that okeyness of living here or it does not? If it does, how. If it doesn't, how? We are looking specifically. Does the family help in being ok, living here despite the negative effects.

Khutso: it helps coz your family, our family motivates us to work hard and make sure that we do not, uh in my family my father works at Sasol, he does not like to but he does not have a choice. He says that he was not, he works at Sasol because there was no other opportunities that he was exposed to. Every time he also informs us about the negative effects of Sasol, how bad it is how hard it is at Sasol. Because they actually make them work harder than how a normal person would... so, he always tries to motivate us to get out there and learn new things, ya, and study about other careers.

Group 3
Activity 2: Draw, write, talk

F: Ok, explain your image for use please.

Lelo: Ok, my image represents that, even though Sasol does affect us in a negative way, it [Sasol] does provide job opportunities for our parents. In order to provide for the needs that we have.

Activity C: clay talk

MJ: Life becomes easier because they [Sasol] opened job opportunities, you know for them [parents] to go and work and …? If there is no work they won't be able to pay for our schools and stuff you know – our needs. You know how our needs …? Sasol employing our parents

F: So there is no – is there any emotional way that the parents support?

Luyanda: There is, when we are sick and they work very hard, long hours – so they [parents] spend most of their time trying to make money, trying to make a living. I don't ***healthy

F: Ok, but how does the emotion in the family help you *** you to be ok in this negative circumstances

Minky: we [family] stand together

F: you stand together – ok but unity – yes, would

Group 4
Activity 2: Draw-write-talk

Carol: Okay, the reason why I decided to make this pose, you can see there's a smile and there's also a heart. Smile symbolises my happiness and the heart symbolises the love I have around this place. Most of my family is located in around Secunda. I don't have family outside the province. So yeah, I'm happy in this place because my family and my loved ones are here.

Quphza: Because I have friends, I have people to talk to about my situation. Yeah, so I have my family.

Lunga: I have just said that the family also motivates me…

Brute: What makes me feel better is family and friends. Sometimes I'm being negative about myself, but when I'm around my friends I forget about my negative thoughts. And music makes me feel okay and be myself.

Lwande: They [Family] look after you.

Brute: Yeah, yeah. The things that I do with my friends, the advice that family gives.

F: Thank you very much. Who wants to do next? Carol. Who or what makes you feel okay?

Carol: Well, for me it's the same thing as I did in the first one. I'm just going to read this. I drew a heart. I've written love and happiness, family and friends. So, since my whole family and friends are located in this place, they are the reason behind my happiness regardless the negative effects of the petro-chemical.

Carol: My family – family gatherings. Yeah, just being with them. Yeah.

F: So if you have to highlight something, just as example, something that's the most important to you being okay? A person or a something? If you have to choose one thing?

Siya: I'll choose my family.

F: And if you have to, not choose, but select one family member that you feel who gives you the most advice, the best advice?

Siya: My grandfather.

Extracts (from above transcript) that appear to answer my research question	Open code	Axial Codes (that underpinned candidate themes)
By basics ne, I'm saying I have food, I have shelter, I have clothes, because my parents or my brother, they work at Sasol, they are able to provide all of those things for me, because of Sasol.	Family employment at Sasol provides for adolescent's basic needs	Family members work at Sasol
[Sasol] affected- It's affected my community positively because everyone has been able to take care of their family.	Community is able to take care of their family because of the industry	Family members work at Sasol
My family helps. It does help because most of my family members are working at Sasol and I see the good that Sasol brings to them. It created jobs for them, it helps the support their family, my family and yes.	Sasol creates jobs for family members so they may provide for their family members	Family members work at Sasol
Okay the only way they are helping me to deal with Sasol is that they are able to go in there and bring something since I can't.	Family members working at Sasol provide adolescent with something she needs	Family members work at Sasol
I have my brothers, my sister all actually work at Sasol , so they're able to bring something back home	Family members [siblings] working at Sasol provide	Family members work at Sasol
I drew myself surrounded by love and attention. What makes me to be okay is the love, I guess of my family, friends.	Love and attention from family makes him okay	Families provide affective support to youth
Do you think the family supports him in any other way? Maybe emotionally, what do you think? Financially	Family support participant financially [Participant indicates family works at Sasol]	Family members work at Sasol
Like, what makes it ok are my sisters, they are like my everything to me. Even though they disrespect me sometimes but they know that I put them first. I	Adolescent motivated to seek positive future opportunities for the sake of her sisters	Families motivate youth to create positive futures

know that everything that I do I think of them first because they are all I have.		
he [Father] motivates us each and every day, he does not want us ending up at Sasol.	Family (father) motivates adolescents to pursue careers other than those offered by Sasol	Families motivate youth to create positive futures
they [family] want you to a doctor or something, they won't let you go to Sasol, right.	Family motivates adolescents to pursue careers other than those offered by Sasol	Families motivate youth to create positive futures
our family motivates us to work hard and make sure that we do not, uh in my family my father works at Sasol, he does not like to but he does not have a choice. He says that he was not, he works at Sasol because there was no other opportunities that he was exposed to.	Father works at Sasol because of limited opportunities	Families motivate youth to create positive futures
it [Sasol] does provide job opportunities for our parents. In order to provide for the needs that we have.	Sasol provides job opportunities to parents and these help parents address adolescents' needs	Family members work at Sasol
Life becomes easier because they [Sasol] opened job opportunities, you know for them [parents] to go and work and ...? If there is no work they won't be able to pay for our schools and stuff you know – our needs.	Life becomes easier due to job opportunities offered by Sasol to parents	Family members work at Sasol
we [family] stand together	Families stand together in unity	Families provide affective support to youth
the heart symbolises the love I have around this place. Most of my family is located in around Secunda. I don't have family outside the province. So yeah, I'm happy in this place because my family and my loved ones are here.	Happy in this place because family and loved one's are here	Families provide affective support to youth
I have people to talk to about my situation. Yeah, so I have my family.	Can talk to family about negative situation	Families provide affective support to youth
What makes me feel better is family and friends	Family makes adolescents feel better about their negative situation	Families provide affective support to youth

They [Family] look after you.	Families care for adolescents	Families provide affective support to youth
The things that I do with my friends, the advice that family gives.	Family provides advice and guidance	Families provide affective support to youth
I drew a heart. I've written love and happiness, family and friends. So, since my whole family and friends are located in this place, they are the reason behind my happiness regardless the negative effects of the petro-chemical.	Family provides adolescent with love and happiness	Families provide affective support to youth
My family – family gatherings. Yeah, just being with them. Yeah.	Presence of family enables resilience	Families provide affective support to youth
select one family member that you feel who gives you the most advice, the best advice? My grandfather.	Grandfather provides good advice	Families provide affective support to youth

Inclusion and Exclusion Criteria for Axial Codes

Axial code	Inclusion criteria	Exclusion criteria
Family members work at Sasol	Any reference to adolescent's basic needs (e.g. food, shelter, schooling, etc.) being provided by a family member who is employed at Sasol.	Any reference to basic needs being provided for by the individual themselves, or the community, as well as by a family member who is not employed by Sasol.
Families provide affective support to youth	Any reference to adolescent's receiving affective support (e.g. love, attention, guidance, etc) from a member f their family.	Any reference to the individual receiving affective support from themselves, in the form of personal resources, or from community members.
Families motivate youth to create positive futures	Any reference to family members motivating adolescents to pursue or create opportunities in their future, which have positive results, and which are not related to employment at Sasol.	Any reference to adolescent's personal pursuits of positive future opportunities, without the mention of a family members assisting in this decision.

7.3   ADDENDUM C: EXCERPT OF RESEACHER DIARY

Data generation day
26 August 2017

Reflecting on my experience of working with a co-facilitator:

I was paired with a CAP member as my co-facilitator. He was absolutely phenomenal!! He was very well prepared and enthusiastic. He stepped in often and monitored participants as they completed activities.

He also had side discussions with me, explaining some aspects of their culture, in which I believe I learnt a lot! Our interaction also appeared to put participants at ease as we interacted as friends.

Reflection about the research experience:

I felt happy that so many participants had come. Many were late making me worry that we would not have enough participants. The participants were very nice and were willing to form groups and engage with me. Although nervous at first, I felt at ease quickly once we began with the icebreaker. Initial themes I've identified include; Sasol appears to be responsible for the positive as well as the negative emotions experienced by participants; Family seems to be an important aspect of life – especially for financial support.

7.4 ADDENDUM D: INFORMED CONSENT

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Faculty of Education

PARTICIPANT INVITATION AND ASSENT FORM –
Activity 2 (Adolescents)

We invite you to participate in a project called: *Patterns of Resilience among Youth in Communities that Depend on Oil and Gas Production and Those Coping with Climate Change.*

Who are we?

We are researchers from the University of Pretoria (South Africa), Dalhousie University (Canada), Royal Roads University (Canada) and Khulisa Social Solutions (South Africa). Our contact details are at the end of this letter if you need them.

What are we doing in this project?

Broadly, we want to learn from you (and other people from the Secunda area) what makes it possible for people to be OK in life when they live in communities which are involved in the oil and gas industry. We will do the same with people living in North American communities which are involved in and challenged by the oil and gas industry. We will use this information to better understand what makes it possible for people to be healthy and to feel good. We want to use this understanding to make it possible for more people who live in communities involved in the oil and gas industry to be healthy and feel good.

The Research Ethics Committee of the Faculty of Education, University of Pretoria has said it is OK for us to do this study (UP 17/05/01). They know we will work carefully using South Africa's and international ethical rules (this is actually called the guidelines and principles of the international Declaration of Helsinki and

Room 4-1.7, Level 4, Building
University of Pretoria, Private Bag X20
Hatfield 0028, South Africa
Tel +27 (0)12 420 1234
Fax +27 (0)12 420 5678
Email name.surname@up.ac.za
www.up.ac.za

Faculty of Education
Fakulteit Opvoedkunde
Lefapha la Thuto

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 15-17 years old, *and*

2. Are OK speaking English and can read and write in English, *and*

3. Live in the Secunda area, Mpumalanga, and

4. Have been affected (negatively or positively) by the petrochemical industry,

5. Were recommended as a participant for this project by someone working at Khulisa or by a member of the project's Community Advisory Panel.

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 you want to participate, then you must ask your parents/caregivers to agree that you can participate. If they say no, then we unfortunately cannot let you participate. If they say yes, but you say no, then there will be no problem: nobody can force you to say yes. If they say yes and you say yes, then you and your parents/caregivers must complete and sign pages 5 - 6.

- 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.

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

You will be asked to participate in a research activity

Date and time	Place	Description
Date: _____ Time: _____	Embalenhle Sasol Club	We will ask you (and the other young people in your group) to use an artistic activity (e.g., a drawing or clay model or video; we will lend you everything you need to do this) that will help answer the following questions: – How does the petrochemical industry affect your life? – Are boys and girls affected differently and if so how? – What does it mean for a young person to be OK when the petrochemical industry affects their life in a negative way? – What/who makes it possible for young people to be OK when the petrochemical industry affects their life in a negative way? – Are there differences in what/who makes it possible for boys and girls to be OK when the petrochemical industry affects their life in a negative way, and if so how?

We will ask your permission to audio record the above so that we can write down what you say. We will also use video cameras to record what you are saying and doing during the research. We will also take photos of you during the research; we will ask your permission to use your pictures in on social media and on our websites.

What do you get out of this?

We would like to offer you R100 as a token of our appreciation. At the end of this study, a copy of the findings will be made available to you if you would like to have them.

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
Speaking English could be tiring or difficult.	If you prefer, you can speak in your home language. We will ask members of the research team or others in your group to translate into English so that the researchers who speak English can also understand.
You will complete the activities on [date] in a group.	Because you will be part of a group, other people will know that you participated and what you said. To try and minimize outsiders knowing what you said, we will agree on group rules (e.g., treating one another respectfully; not talking to others about what specific participants said/did).
If your group chooses to use a videoactivity and this video is made public, your community and many other people will know that you participated in the study.	You do not have to take part in the video. Alternatively, if you do want to take part but you don't want other people to identify you, then we can find ways of hiding your face (e.g., by wearing a mask). You can also choose whether your name is added to the credits or list of people who are in the video.

There is one other thing that you must know: If you tell us, while we are doing the research with you that you are planning to hurt someone or that someone is abusing you, then we must tell people (including the police) who can help.

What will happen to what you write or draw or make or say during the study?

We will ask a person/people to listen to the audio-recordings of the activity that you did and type what you and the other participants have said. This person/these people will sign a form in which they promise to keep the recording private (meaning they can't tell anyone anything about what they listen to and type up). Once

everything is typed up, the researchers from the University of Pretoria will delete (erase/wipe out) what was recorded.

We (the South African and Canadian researchers working in the project) will study the typed-up version of what you and others said. We will use the information you gave us to finalize a questionnaire that we will ask about 300 young people from the Secunda area to complete. We will also use it to write about what makes it harder and easier for young people to do well in life. We will probably quote what you said/wrote or show the drawings you made when we write about what we learnt from you or when we tell others about what we learnt from you (e.g., at a conference or when we teach students). We will also compare what you tell us with what we have learnt from young people living in Canadian communities which are involved in the oil and gas industry and use this comparison to better understand how young people think about health and about feeling good.

We will keep a copy of what you said in a safe place at the University of Pretoria. We will keep the copies for 10 years. Your name will not be on any of these copies. We will allow university students who have to complete research projects about resilience, adolescents, climate change or communities dependent on oil and gas producing companies to use these copies for their research projects.

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

Only the researchers from the University of Pretoria will have access to the forms that you sign. They will store these forms for 10 years.

Will it cost you anything to take part in this study?
No, it will not cost you anything. We will pay the cost of the local bus/local taxi that you use to participate in the research activities on _____

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 Mosna Khaile on 0767756180 or email her at Khaile.mosna@up.ac.za
> ➢ You can contact the chair of the Research Ethics Committee, Prof Liesel Ebersohn on (012 422 2337) 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 Mosna

Declaration by participant

By signing below, I ………………………………..…………. [full name] agree to take part in a research study named: *Patterns of Resilience Among Youth in Communities that Depend on Oil and Gas Production and Those Coping with Climate Change.*

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 pressurised to take part.

- I understand that my parents/legal caregiver must also say yes (in writing) before I can participate

- I understand that what I contribute (what I say/write/draw) could be reproduced publicly and/or quoted.

- I reserve the right to decide whether or not my actual name or a made-up one will be used in the research. I will decide this at the end of my participation once I have a better understanding of what is involved, and once I have talked through what that would mean with the university researchers.

- 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 the findings of the study are in the process of publication I cannot withdraw what 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 agree that photos/videos of me engaging in research activities can be put up on social media and on research websites and be used in research-related publications/conference papers.

Signed at (*place*) ....…......………. on (*date*) …………...………. 2017

....

Signature of participant   **Signature of witness**

You may contact me again	**Yes**	**No**

I would like a summary of findings	**Yes**	**No**

My contact details are:

Name & Surname: _____

Age: _____

Male / Female: _____

Postal Address: _____

Email: _____

Cell Phone Number: _____

In case the above details change, please contact the following person who knows me well and who does not live with me and who will help you to contact me:

Name & Surname:

_____

Phone/ Cell Phone Number /Email:

_____

Declaration by Parent/Legal Guardian

By signing below, I …………………………..…………. [full name] agree to allow my child/the child I legally care for [child's full name: ....] to take part in a research study entitled: *Patterns of Resilience Among Youth in Communities that Depend on Oil and Gas Production and Those Coping with Climate Change*. I declare that:

•   My child asked me to read the information about this study. 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 my child's participation in this study is **voluntary** (I can say no and my child can too) and I have not been pressurised to allow him/her to take part.

•   I understand that what he/she contributes will be shared with international researchers.

•   I understand that what he/she contributes (says/writes/draws) could be reproduced publicly and/or quoted.

•   I understand that my child has the right to decide whether or not his/her actual name or a made-up one will be used in the research and that this decision will be made at the end of the study once my child has a better understanding of what is involved, and once he/she have talked through what that would mean with the university researchers.

•   My child may be asked to leave the study before it has finished, if the researcher feels it is in his/her best interests.

•   I understand that researchers will not be asking questions about abuse/harm, but that they have will have to report abuse/harm to child protection services if they should become aware that your child is being abused/harmed.

•   I agree that photos/videos of my child engaging in the research activities can be put up on social media and on research websites and be used in research-related publications/conference papers.

Signed at (*place*) ....…….......……. on (*date*) …………...………. 2017

.... 				....
Signature of parent/legal guardian 			**Signature of witness**

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*) …………...……….. 2017

....
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*) ………………….. 2017

....
Signature of researcher   **Signature of witness**

**PARTICIPANT INVITATION AND CONSENT
FORM – Activity 2 (Young Adults)**

We invite you to participate in a project called: *Patterns of Resilience among Youth in Communities that Depend on Oil and Gas Production and Those Coping with Climate Change*.

Who are we?

We are researchers from the University of Pretoria (South Africa), Dalhousie University (Canada), Royal Roads University (Canada) and Khulisa Social Solutions (South Africa). Our contact details are at the end of this letter if you need them.

What are we doing in this project?

Broadly, we want to learn from you (and other people from the Secunda area) what makes it possible for people to be OK in life when they live in communities which are involved in the oil and gas (petrochemical) industry. We will do the same with people living in North American communities which are involved in and challenged by the petrochemical industry. We will use this information to better understand what makes it possible for people to be healthy and to feel good. We want to use this understanding to make it possible for more people who live in communities involved in the petrochemical industry to be healthy and feel good.

The Research Ethics Committee of the Faculty of Education, University of Pretoria has said it is OK for us to do this study (UP 17/05/01). They know we will work carefully using South Africa's and international ethical rules (this is actually 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.

Room 4-1.7, Level 4, Building
University of Pretoria, Private Bag X20
Hatfield 0028, South Africa
Tel +27 (0)12 420 1234
Fax +27 (0)12 420 5678
Email name.surname@up.ac.za
www.up.ac.za

Faculty of Education
Fakulteit Opvoedkunde
Lefapha la Thuto

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

1. Are 18-24 years old, *and*

2. Are OK speaking English and can read and write in English, *and*

3. Live in the Secunda area, Mpumalanga, and

4. Have been affected (negatively or positively) by the petrochemical industry,

5. Were recommended as a participant for this project by someone working at Khulisa or by a member of the project's Community Advisory Panel.

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.

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

You will be asked to participate in a research activity

Date and time	Place	Description

Date:	Embalenhle Sasol Club	We will ask you (and the other young people in your group) to use an artistic activity (we will give you everything you need to do this) that will help answer the following questions:
Time:		– How does the petrochemical industry affect your life?
		– Are young men and women affected differently and if so how?
		– What does it mean for a young person to be OK when the petrochemical industry affects their life in a negative way?
		– What/who makes it possible for young people to be OK when the petrochemical industry affects their life in a negative way?
		– Are there differences in what/who makes it possible for young men and women to be OK when the petrochemical industry affects their life in a negative way, and if so how?

We will ask your permission to audio record the above so that we can write down what you say. We will also use video cameras to record what you are saying and doing during the research. We will also take photos of you during the research; we will ask your permission to use your pictures in on social media and on our websites.

What do you get out of this?

We would like to offer you R100 as a token of our appreciation. At the end of this study, a copy of the findings will be made available to you if you would like to have them.

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
Speaking English could be tiring or difficult.	If you prefer, you can speak in your home language. We will ask members of the research team or others in your group to translate into English so that the researchers who speak English can also understand.
You will complete the activities on [date] in a group.	Because you will be part of a group, other people will know that you participated and what you said. To try and minimize outsiders knowing what you said, we will agree on group rules (e.g., treating one another respectfully; not talking to others about what specific participants said/did).
If your group chooses to use a videoactivity and this video is made public, your community and many other people will know that you participated in the study.	You do not have to take part in the video. Alternatively, if you do want to take part but you don't want other people to identify you, then we can find ways of hiding your face (e.g., by wearing a mask). You can also choose whether your name is added to the credits or list of people who are in the video.

What will happen to what you write or draw or make or say during the study?

We will ask a person/people to listen to the audio-recordings of the activity that you did and type what you and the other participants have said. This person/these people will sign a form in which they promise to keep the recording private (meaning they can't tell anyone anything about what they listen to and type up). Once everything is typed up, the researchers from the University of Pretoria will delete (erase/wipe out) what was recorded.

We (the South African and Canadian researchers working in the project) will study the typed-up version of what you and others said. We will use the information you

gave us to finalize a questionnaire that we will ask about 300 young people from the Secunda area to complete. We will also use it to write about what makes it harder and easier for young people to do well in life. We will probably quote what you said/wrote or show the drawings you made when we write about what we learnt from you or when we tell others about what we learnt from you (e.g., at a conference or when we teach students). We will also compare what you tell us with what we have learnt from young people living in Canadian communities which are involved in the petrochemical industry and use this comparison to better understand how young people think about health and about feeling good.

We will keep a copy of what you said in a safe place at the University of Pretoria. We will keep the copies for 10 years. Your name will not be on any of these copies. We will allow university students who have to complete research projects about resilience, adolescents, climate change or communities dependent on petrochemical producing companies to use these copies for their research projects.

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

Only the researchers from the University of Pretoria will have access to the forms that you sign. They will store these forms for 10 years.

Will it cost you anything to take part in this study?
No, it will not cost you anything. We will pay the cost of the local bus/local taxi that you use to participate in the research activities on _____

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 Mosna Khaile at 0767756180 or email her at Khaile.mosna@up.ac.za

> You can contact the chair of the Research Ethics Committee, Prof Liesel Ebersohn on (012 422 2337) 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 Mosna

Declaration by participant

By signing below, I …………………………..………… [full name] agree to take part in a research study named: *Patterns of Resilience Among Youth in Communities that Depend on Oil and Gas Production and Those Coping with Climate Change.*

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 pressurised to take part.

- I understand that what I contribute (what I say/write/draw) could be reproduced publicly and/or quoted.

- I reserve the right to decide whether or not my actual name or a made-up one will be used in the research. I will decide this at the end of my participation once I have a better understanding of what is involved, and once I have talked through what that would mean with the university researchers.

- 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 the findings of the study are in the process of publication I cannot withdraw what 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 agree that photos/videos of me engaging in research activities can be put up on social media and on research websites and be used in research-related publications/conference papers.

Signed at (*place*) ....…....………… on (*date*) …………...……….. 2017

....
Signature of participant   **Signature of witness**

You may contact me again	**Yes**	**No**
I would like a summary of findings	**Yes**	**No**

My contact details are:

Name & Surname: _____

Age: _____

Male / Female: _____

Postal Address: _____

Email: _____

Phone Number: _____

Cell Phone Number: _____

In case the above details change, please contact the following person who knows me well and who does not live 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*) …………...……….. 2017

....
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*) …………...……….. 2017

....
....
Signature of researcher   Signature of witness

7.5   ADDENDUM E: ETHICS CLEARANCE CERTIFICATE FOR GREATER PROJECT

Faculty of Education

Fakulteit Opvoedkunde
Lefapha la Thuto

Ethics Committee

31 August 2017

Ms R Bloemendal

Dear Ms Bloemendal

REFERENCE: UP 17/06/01 Theron 17- 003

This letter serves to confirm that your application was carefully considered by the Faculty of Education Ethics Committee. The final decision of the Ethics Committee is that your application has been **approved** and you may now start with your data collection. The decision covers the entire research process 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.
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
   - Sites

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 17/06/01 Theron 17- 003 in any communication with the Ethics Committee.

Best wishes

Prof Liesel Ebersöhn
Chair: Ethics Committee
Faculty of Education