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Resilience-enabling relationships of older adolescents

by

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Declaration

I, Mthandeki Simon Zhange (student number: 18206744), declare that this mini-dissertation, entitled *Resilience-enabling relationships of older adolescents*, which I hereby submit for the degree of 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.

Mthandeki Simon Zhange

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- Compliance with approved research protocol,
- No significant changes,
- Informed consent/assent,
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- Registered title, and
- Data storage requirements.

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I'd like to thank my heavenly Father for giving me the strength and courage to face whatever comes my way. I am always encouraged by the scripture in 2 Corinthians 4:8, which says that, "We are pressed on every side by troubles, but we are not crushed. We are perplexed, but not driven in despair" (New Living Translation). I know you see the best in me and you are in the process of refining me to best fit the course which you have called me to run.

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Abstract

This is a sub-study of the Resilient Youth in Stressed Environments (RYSE) Project (ethics clearance, UP17/05/01). RYSE aims to better understand the resilience of youth who live in environments that are stressed by the petrochemical industry and other related risks. In particular, the purpose of this study was to explore the relationships that enhance older adolescents' resilience amid the double risk posed by township[i] residence and petrochemical pollution. I used phenomenology as my research design and a socio-constructivist epistemology as the paradigm for my study. Eight participants, who were purposively recruited because they were between the ages of 18 and 24 years and hailed from eMbalenhle township, participated in a photo elicitation activity and a group interview. I deduced themes from the resulting data by applying the relational codes from the RYSE codebook. The themes I deduced were as follows: family members care about behaviours and values, reliable friends facilitate opportunities, community members support survival and model success, and God provides guidance. There was no evidence of online relationships, relationships with pets and animals, or relationships with mental health professionals in my data, but these relationships were indicated in the codebook. The themes that I deduced are useful to the resilience theory as they affirm that resilience is a contextual phenomenon. Therefore, sociocultural aspects should not be neglected when one seeks to understand this complex phenomenon.

Key Words: adolescents, petrochemical industry, qualitative, resilience, township

Letter from editor

DECLARATION

I herewith declare that I,

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List of abbreviations

SERT	Socio-Ecological Resilience Theory
RYSE	Resilient Youth in Stressful Environments
CAP	Community Advisory Panel

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CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION AND RATIONALE OF THE STUDY

Human resilience can be defined as the processes or patterns of positive adaptation and development that act as a protective barrier against maladjustment in the context of significant threats to an individual's life and functioning (Masten & Wright, 2010). Resilience is a shift away from looking at pathology, risk or vulnerability and instead focuses on resources that facilitate positive adaptation and improve strength or proficiency (Borge, Motti-Stefanidi & Masten, 2016). Strength and proficiency can be reinforced through resilience-enabling supports and assets that can help individuals, families, institutions and societies overcome adverse life conditions (Dreyer, 2015; van Rensburg, Theron & Rothmann, 2018).

The focus on resilience from a socio-ecological perspective considers how available resources can promote positive outcomes in adversity (Ungar, 2015). The socio-ecology of resilience includes the multidimensional interaction of protective factors that range from individual to contextual factors, but the emphasis is on resources outside of the individual, such as supportive relationships or meaningful services (Ungar, 2011; Ungar, 2015). Ungar (2011, p. 1) argues that "greater emphasis needs to be placed on the role that social and physical ecologies play in positive developmental outcomes when individuals encounter significant amount of stress". While studying the resilience process, it is important to focus on its complexity and look at what supports resilience in a specific context, culture, religious space or age group (Ungar, 2011; Ungar, 2015).

Various international and South African researchers, including Hall and Theron (2016), Soleimanpour, Geierstanger and Brindis (2017), Van Breda and Theron (2018) and Ungar (2018), have conducted extensive research on the socio-ecology of the resilience of children and adolescents (i.e. ages 0-24). My research focuses on the supportive relationships that family, friends, schools, community, as well as social welfare ecologies offer adolescents who were exposed to risks as they were living in a resource-constrained environment close to a large petrochemical industry. Therefore, my research focuses on the resilience of adolescents in the relational domain of resilience.

My research study is part of the RYSE project (Resilient Youth in Stressful Environments). RYSE is a collaboration between the University of Pretoria and the Resilience Research Centre at Dalhousie University, Canada. The purpose of this project is to examine the biopsychosocial resilience of young people over time and the relationships between the resilience of ecological systems where there are disruptions (see http://ryseproject.org/about/). It is a 5-year research project that explores patterns of resilience among young people living in petrochemical environments. Petrochemical environments are associated with risks to people's physical, psychological and economic functioning (Goldenberg, Shoveller, Koehoorn & Ostry, 2010). My sub-study within this broad project is aimed at exploring the relationships that facilitate older adolescents' resilience in South African communities (especially townships). The literature review (see Chapter 2) that I conducted shows that no research has been published on the risks and the resilience process of South African young people (aged between 18 and 24 years) who live in communities affected by typical township risks and risks related to the petrochemical industry. I am particularly interested in these relationships because positive adjustment is often enabled by significant relationships that young people form with nuclear family members, extended family members, community professionals such as teachers, nurses, social workers and other helping professionals (Clements-Nolle & Waddington, 2019; Van Rensburg et al., 2018). Since resilience is a contextually-bound phenomenon, I believe that relationships are affected by the different living conditions found in different contexts (Ungar, 2011). I also believe that my research can supplement the work of researchers such as Madhavan and Crowell (2014) and Van Rensburg, Theron and Ungar (2019) who all studied relationships that support resilience, as it extends to role players found in South African communities (especially townships). Furthermore, as a student training to be an educational psychologist, I feel that I should have a deeper understanding of the relationships that facilitate positive adjustment (especially in communities affected by the petrochemical industry in South Africa) so that I can strengthen or capacitate the resilience-enabling relationships that adolescents have with significant others.

1.2 PROBLEM STATEMENT

The research conducted by resilience researchers such as Madhavan and Crowell (2014), Malindi and Machenjedze (2012), Mosavel, Ahmed, Ports and Simon (2015), Phasha (2010) and Theron and Theron (2013) reports on the importance of supportive relationships in

enabling the resilience of adolescents in South Africa. However, a limited number of studies exists that explain *how* these relationships facilitate the resilience of older adolescents (aged between18-24) living in townships close to a petrochemical industrial site (Theron & Theron, 2010; Van Breda & Theron, 2018). Little is known about the resilience process of these older adolescents who are living in an industrial community context where they simultaneously face township and petrochemical industry risks.

The South African National Development Plan for 2030 sees the country heading towards strengthening its petrochemical refineries by starting either a new oil-to-liquid or coal-to-liquid refinery plant and/or by upgrading the existing refineries, such as the Durban petrochemicals hub (NDP, 2013). Commentators report that South Africa is looking to grow both its lubricants and retail fuel business as well as restart the offshore oil exploration that it put on hold in 2014 at Durban (le Guern, 2018). This confirms that the petrochemical industry can be expected to grow in South Africa. According to Statistics SA (2018), the South African petrochemical industry (which falls under the trade industry) has reported an increase in growth of 4.1% from September to December 2018. Given that the petrochemical industry is growing, it is important to understand what enables the resilience of youth living in this context.

Since resilience is a contextually-bound phenomenon (Ungar 2011, 2015), the research conducted in contexts/communities (more specifically, townships) affected by the petrochemical industry is likely to expand the body of resilience research in the South African context. As a student educational psychologist and researcher, I think that it is necessary to explore the relationships that account to the resilience of older adolescents living in a township affected by risk factors related to the petrochemical industry and township residence. This is because adolescents who are at risk, but turn to supportive relationships (e.g., family, teachers, service providers), tend to exhibit resilience despite their difficult life circumstances (Van Rensburg, Theron, Rothmann & Kitching, 2013). It is possible that adolescents living in a context challenged by township and petrochemical industry risks will report relationships that differ from previous accounts of resilience-enabling relationships in other contexts (Malindi & Machenjedze, 2012). An effective intervention can only take place if a helping professional fully understands the context in which they are working in terms of what the recipients perceive as meaningful (Liebenberg et al., 2016). My study of resilience in a specific socio-ecological context aims to enable service providers and practitioners to better understand which relational supports matter to older adolescents living in communities and townships affected by the petrochemical industry. I trust that my findings will help service providers such as

psychologists and social workers gain insight into ways of better championing the resilience of these specific groups of young people.

1.3 PURPOSE OF THE STUDY

The purpose of my qualitative study was to explore which relationships older adolescents living in eMbalenhle identify as resilience-enabling and to then determine why these relationships are resilience-enabling. Therefore, the aim of this study is to reach a deeper understanding of the relationships that support the resilience of older adolescents in order to ultimately better support the resilience of older adolescents.

1.4 RESEARCH QUESTION

My study was of limited scope and dealt with a single research question: Which relationships do older adolescents living in eMbalenhle identify as resilience-enabling and what about these relationships is resilience enabling?

1.5 THEORETICAL FRAMEWORK: THE SOCIAL ECOLOGY OF RESILIENCE

The Socio-Ecological Resilience Theory (SERT) as proposed by Ungar (2011) guided this study.

The SERT is a systemic approach to understanding the resilience phenomenon. Resilience becomes possible when adolescents who are experiencing adversity can relate to and use the available support in their socio-ecology (Theron & Theron, 2013; Ungar, 2015). Culture and context play a role in how people perceive specific resources as meaningful to them (Masten, 2014; Ungar, 2015). This compels educational psychologists to understand which support systems are meaningful to clients before they attempt to intervene in any way.

Previous resilience studies in South Africa (Ebersöhn, 2017; Madhavan & Crowell, 2014; Malindi & Machenjedze, 2012; Mosavel et al., 2015; Phasha, 2010) have similarly adopted a systemic or SERT approach. My current research is based on the four principles that apply in the socio-ecological interpretation of the resilience phenomenon, namely: decentrality, complexity, atypicality, and cultural relativity (Ungar, 2011).

- Decentrality means that we need to shift the focus away from the individual towards emphasising the role and responsibility of the environment instead. In other words, an individual's competencies alone are not responsible for resilience, but the environment or socio-ecology should provide the resources the individual must use (Ungar, 2011, 2015). Apart from Ungar, other resilience literature (Ebersöhn, 2017; Masten, 2016; Masten, & Obradovic, 2008; Theron & Theron, 2013) points to the role that socio-ecology plays in facilitating resilience. It also argues that socio-ecological resources influence or reinforce individual capacity (cognition, locus of control, temperament, etc.) in championing resilience.
- Complexity means one cannot predict the route or the starting point of resilience; resilience is facilitated by complex interactions of environmental aspects (Ungar, 2011; Ungar, 2015). For example, Zebrack et al. (2014) conducted a study in America involving 215 adolescents and young adults aged 15-39 years who had been diagnosed with cancer. Their study assessed the psychological distress and psychosocial service needs of people diagnosed with cancer and revealed that, when faced with this life-threatening disease, people need information, counselling and practical support for their positive psychological adjustment. On the other hand, a study conducted by Pienaar, Swanepoel, van Rensburg and Heunis (2012) in South Africa which involved AIDS orphans living in a residential care facility, found that children's resilience in this context was promoted by teachers, psychologists, nurses, and by the children's attributes and spirituality, which created purpose and meaning amidst adversity. These two resilience studies were conducted in different contexts and exposed similarities and differences in terms of what promotes resilience in adversity. Both studies revealed that what supports the resilience of adolescents is complex (Masten, 2014).
- Atypicality means that the context decides the effectiveness of a particular set of resilience resources. No one should adjudicate behaviour as either adaptive or maladaptive without looking closely at the socio-cultural context in which that behaviour is presented (Ungar, 2011). For example, a study conducted by Theron and Malindi (2010) with 20 street children in the Free State and Gauteng provinces, revealed that children who live on the streets turn to wearing dirty clothes deliberately to elicit pity from the public. They also engage in petty theft and sniffing glue to numb themselves to the hardships of life. This behaviour is typically considered as maladaptive. Nevertheless, it is one of the responses to harsh environmental conditions

and should not be considered as non-adherence to accepted norms and standards. Such behaviour should rather be validated as a resilience-supporting response, given the context in which it is displayed (Ungar, 2015).

- Cultural relativity means that protective mechanisms occur within a particular family, community, or other socio-cultural context. The sociocultural context regulates the resilience enabling protective mechanisms that are likely to be employed in adverse situations (Ungar, 2011; Ungar, 2015). Other resilience researchers such as Masten (2016) and Rutter (2012; 2013) argue that the process of resilience differs from one individual to the next, given the individual's culture and context. For example, the resilience process of adolescents in a South African traditional community context takes a collective pathway. A South African study by Theron and Theron (2013) involved 14 black, university students on a national bursary scheme and showed that a sense of a communal self, belief systems (in God and/or ancestors), and attachment to elders facilitated their resilience process. Since different cultural factors play a significant role in resilience, one cannot assume that the resilience process of a collectivist South African community where social connections and relationships are very important will be the same as the resilience process in an international or Eurocentric context (Theron, 2016).

1.6 CONCEPT CLARIFICATION

1.6.1 Socio-ecology

A socio-ecological theory considers people and events in the context of mutual interaction and mutual influence, and advocates an interdependence of social and ecological systems (Becvar & Becvar, 2014). According to Harvey (2007, p. 10), a social ecological view of adversity and the resilience process "is complex interactions among person, event, and environmental factors".

My working definition of socio-ecology was formulated as follows: A social or structural space that has an impact on a person's physical and psychological functioning. The space can include a family, friends, cousins and relatives, helping professionals, and community organisations such as schools, clinics and religious organisations (Clements-Nolle & Waddington, 2019; Theron, 2017; van Rensburg et al., 2013).

1.6.2 Resilience

The concept of resilience is based on the evidence that some people seem to have better outcomes, compared to others who have faced a comparable level of adversity (Rutter, 2012). Such outcomes can be seen when an adolescent becomes competent in developmental tasks and is able to cope well in multiple domains of functioning, irrespective of past or current adversity (Masten, & Obradovic, 2008; Rutter, 2007). Coping well entails being able to make sense of experiences, having a sense of control over circumstances, being able to form healthy attachments, and being able to self-regulate (Masten, 2016; Sanders & Munford, 2015). From the socio-ecological perspective, resilience is a process that is facilitated by individual resources as well as available contextual and culturally relevant protective resources (Ungar, 2015). Resilience building becomes possible through the resources that facilitate positive adjustment, and these resources differ from one context to the next. For my study, I was interested in the relationships that support resilience.

1.6.3 Resilience-enabling relationships

Resilience-enabling relationships can involve a supportive family, supportive peers, supportive community members/leaders, faith-based supports, and/or service providers from education, mental health, welfare, or criminal justice services (Theron, 2017). These relationships protect and enhance the resilience of adolescents by offering them an optimal environment in which they have the capacity and ability to adapt to adverse conditions that are likely to pose a threat to their physical, social and psychological functioning (Ungar, 2011; Sanders & Munford, 2016; Ungar, 2015). The significance of the support provided by the relationships that people have is dependent on the recipients' perception and experience of it (Corey, 2015).

1.6.4 Adolescence

Adolescence is considered a stage of transition to adulthood and it is accompanied by physical, psychological and psychosocial developmental changes (Louw & Louw, 2014). For example, the adolescent stage comes with the dual task of taking a role in larger societal systems and forming a self-identity. At this stage, the adolescent can internalise the norms and standards of their community and can reason and behave in a morally acceptable way (Berk, 2013). The adolescent stage is also characterised by interdependence and motivation to achieve goals that are related to education and other future aspirations (du Plessis & Ahmed, 2020). Not all

adolescents manage to develop without any development-related risks and psychological disorders.

Sawyer, Azzopardi, Wickremarathne, and Patton (2018) suggest a more inclusive definition of adolescence, which between the age of 10 to 24 years. The RYSE study adopts this and focuses on adolescents between the ages of 14 and 24. In my study, I focused on young people between the ages of 18 and 24 years. This focus addressed the gap in the current resilience literature as explained in the introduction to my study (Van Breda & Theron, 2018).

1.6.5 Risk

A risk is any factor found in the environment that is likely to threaten the physical, psychosocial and psychological well-being of people who are exposed to such risk (Goldenberg et al., 2010; Grönqvist, Nilsson & Robling, 2014). For my study, I noted several risks.

1.6.5.1 Petrochemical-affected community

The petrochemical industry deals with the production or manufacturing of gasoline, cosmetics, fertilisers, detergents, synthetic fabrics, asphalt and plastics (Bateson & Schwartz, 2008; Brender, Maantay & Chakraborty, 2011). A petrochemical-affected community is a residential community living within proximity of a petrochemical site. Such a community constantly faces the negative effects that the petrochemical industry has on the physical, psychological and social domains of human functioning (Goldenberg et al., 2010; Grönqvist et al., 2014; Kruize, Droomers, van Kamp & Ruijsbroek, 2014).

1.6.5.2 Resource-constrained township community

A resource-constrained community is a community affected by poverty. Poverty is likely to be associated with negative outcomes such as unemployment, HIV and AIDS, violence, excessive alcohol and drug abuse (Makanga, Schuurman & Randall, 2017). Many of the resource-constrained communities in South Africa have developed because of apartheid (Jürgens, Donaldson, Rule & Bähr, 2013). Unemployment in many of these township communities is estimated at 60%, which contributes to psychological distress, a decline in life satisfaction, and the risk of mood disorders and substance abuse (Du Toit, De Witte, Rothmann & Van den Broeck, 2018).

1.7 ASSUMPTIONS

At the start of my study, I assumed the following:

- The quality of the relationship between an older adolescent and a particular socio-ecological role player (like a family member, a friend, someone from the community or support organisation) contributes to resilience. I assumed this because the existing resilience literature (Theron & Theron, 2013; Sanders & Munford, 2016) speaks extensively about role players and service provision as relational resources that enables resilience in older adolescents.
- The perceived level of support from relationships, as well as the culturally and contextual relevance of the socio-ecological resources, enables older adolescents to be resilient. I assumed this because the literature (Malindi & Machenjedze, 2012; Ungar, 2011; Van Rensburg et al., 2018) argues that resources that are culturally and contextually meaningful are vital for resilience and not mere resources.
- Relationships that people have with God and members of religious communities (such as church members or religious leaders) can improve the resilience of these older adolescents. I assumed this because of the relationship I have with my local church and Pastor. The resilience literature shows that the experiences that adolescents have in their local church (and the support they receive from religious leaders) enable them to make meaning out of adversity (Dreyer, 2015). Religious communities contribute towards adolescents' feelings of belonging, being loved and being cared for, which contributes significantly to their resilience process (Hope, Assari, Cole-Lewis & Caldwell, 2017).

1.8 METHODOLOGY

The methodology adopted in my study is discussed in detail in Chapter 3. Here follows a summary of the methodology applied in this study:

1.8.1 Epistemological paradigm

The epistemological paradigm that was used for this study is the socio-constructivist epistemology. My reasons for choosing socio-constructivism as the epistemological paradigm, as well as the advantages and disadvantages of this approach are reported in Chapter 3 (Section 3.3.1).

1.8.2 Methodological paradigm and research design

A qualitative methodological paradigm was applied (Creswell, 2014) and phenomenology was used as the research design. Phenomenology seeks to provide a deeper understanding (description and interpretation) of a particular phenomenon that the researcher is interested in (Diaz, 2015; Kafle, 2011). The reasons why I chose the aforementioned paradigm and design, as well as their advantages and disadvantages, are reported in Chapter 3 (Sections 3.4.2 and 3.5.1 respectively).

1.8.3 Sampling

Purposive sampling was used in my study and refers to any kind of sampling where the selection of participants is not determined by the statistical principle of randomness (Diaz, 2015; Terre Blanche, Durrheim, & Painter, 2006). It is a non-probability method and the sample selected is based on certain characteristics of the sample that will provide rich and detailed information to the researcher to answer the research question. The reasons why I chose purposive sampling as the sampling procedure, as well as its advantages and disadvantages, are discussed in Chapter 3 (Section 3.5.2). In total, eight participants constituted the sample of my qualitative study of limited scope. Participant details are also provided in Chapter 3 (Section 3.5.2).

1.8.4 Data generation

I generated data for my study by means of photo elicitation and associated semi-structured group interview. A semi-structured interview is an interview method that entails a set of questions that guide the exploration of the topic or issue under study (Kafle, 2011). The reasons why I chose semi-structured interviews and photo elicitation as the data generation method, as well as the advantages and disadvantages of these methods, are discussed in Chapter 3 (Section 3.5.3).

1.8.5 Data analysis and interpretation

Deductive, or a priori, coding was used to analyse my data. Deductive coding involves the use of pre-established codes when analysing and interpreting the data to arrive at an answer to the research question (Creswell, 2014). My reasons for deciding on deductive data analysis, as well

as the advantages and disadvantages of this analytic approach, are discussed in Chapter 3 (Section 3.5.4).

1.9 QUALITY CRITERIA

According to Lincoln and Guba (1994), a variety of quality criteria should be adhered to establish trustworthiness in research. These criteria, which include credibility, dependability, transferability, confirmability and authenticity, are discussed in detail in Chapter 3 (Section 3.6).

1.10 ETHICAL CONSIDERATIONS

My study formed part of the Resilient Youth in Stressful Environments (RYSE) study. This study received ethical clearance from the Ethics Committee of the Faculty of Education at UP on 1 May 2017 and my sub study was also cleared (see Addendum 1). When I interacted with the participants, I was careful to work ethically – as explained in Chapter 3 (Section 3.7)

1.11 CONCLUSION

This chapter served as the introduction to my study. I showed that previous South African resilience research (Van Breda & Theron, 2018) and Ungar (2011) spoke extensively about the importance of understanding resilience processes in context. I therefore saw the necessity of further exploring the resilience of older adolescents in eMbalenhle (a South African township affected by the petrochemical industry), seeing that this context has not been covered by the existing resilience literature. In Chapter 2, I summarise some of the key themes in the socio-ecological resilience process of adolescents by drawing from international and South African studies.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter consists of two parts. In the first part, I summarise what is known about the risks connected with extractive processes like those of the petrochemical industry. Since my study took place in a resource-poor township, I also detail what is known about the typical risks experienced in these townships.

In the second part, I review the resilience literature that reports on the relationships found in the socio-ecology and which are accountable for the resilience process. My literature review looks at the international and South African context, and focuses specifically on the resilience processes of children and adolescents facing various adversities.

2.2 RISKS ASSOCIATED WITH THE PETROCHEMICAL INDUSTRY

2.2.1 Physical health risks

The physical health risks of the extractive industry all concern pollution – air, water, and soil pollution – caused by toxic waste and is associated with devastating physical health problems in human beings (Fløttum, Dahl & Rivenes, 2016). These problems include post-natal low bodyweight, lung cancer, infant mortality, lung function problems, atherosclerosis, as well as asthma, bronchitis and other respiratory tract infections (Bateson & Schwartz, 2007; Gamu, Billon & Spiegel, 2014). Pollution causes serious health risks in adults as well as children (for whom the effects are especially devastating) (Bateson & Schwartz, 2008; Gamu et al., 2014; Brender et al., 2011). Children exposed to air pollution, contaminated drinking water, and toxic waste from industries, like the petrochemical industry, are at risk of getting childhood cancer (such as leukaemia), cardiovascular illnesses, renal disease, diabetes and other health complications. Other respiratory conditions such as asthma, chronic cough and bronchitis are also common. For example, a longitudinal lung function study was conducted by Gauderman et al. (2015) in Southern California on the relationship between air pollution and lung function. Their study consisted of an annual measurement of 2120 children aged 11 years at the beginning of the study and 15 years at the end of the study. The measurement was done over three separate calendar periods, namely 1994–1998, 1997–2001, and 2007–2011. The study used a linear regression model to investigate the association between declining pollution levels

and lung function development. Gauderman et al.'s (2015) study revealed that long-term improvement of the quality of air is clinically associated with positive lung function growth in children. Their research highlights that lung function problems are associated with air pollution, which has devastating effects on the health of children or young people living in gas/oil and mining extraction communities.

In summary, these petrochemical-associated physical health risks are likely to predict negative life outcomes such as school failure, grade retention, and dropout (Shaw, Gomes, Polotskaia & Jankowska, 2015). The effects of pollution also lead to a high mortality rate and this may result in young people losing their parents.

2.2.2 Psychosocial risks

The petrochemical industry can have negative psychosocial effects on society. Common risks are violence and crime, with related experiences of depression and anxiety among communities exposed to industrial and mining extractive processes (Goldenberg et al., 2010; Grönqvist et al., 2014; Kruize et al., 2014). Violence and crime have been linked to the population of petrochemical-affected communities being mobile (Gamu et al., 2014). In addition, industrial processes often mean exposure to lead. Challenges associated with lead exposure are attention problems, impulsivity, and aggressive behaviour – all of which are common predictors of violent or criminal behaviour (Grönqvist et al., 2014; Jensen et al., 2015).

2.2.3 Economic risks

Many communities that depend on the extractive industry are economically stressed (Goldenberg et al., 2010). Various researchers such as Gamu et al. (2014), Genareo and Filteau (2016), Virtanen, Hammarström and Janlert (2016) and Kruize et al. (2014) report that the economic growth associated with industrialisation processes is not always ideal, as it creates many problems for communities. The industrial boom is often associated with poor and residentially segregated communities, such as the people living in townships in South Africa. Further, there are often too few employment opportunities per all those hoping for a job in the industry (Goldenberg et al., 2010).

Poverty may be perpetuated when young people forsake education. For example, a Canadian study (Goldenberg et al., 2010) showed that young people tend not to complete high school because it is not mandatory for petrochemical workers, and many already begin to work in the industry at the age of 15. Not pursuing an education can pose a serious economic threat as many of these young people cannot sustain themselves when industry shutdowns occur.

2.2.4 Risks associated with township residence

The apartheid system was characterised by injustice, and it led to racial segregation, prejudice and discrimination based purely on skin colour. This racial segregation created an 'underclass', especially from 1958 to 1994. According to Du Toit et al. (2018), a township is a place that was demarcated for black, Indian and coloured South Africans during the apartheid era. This segregation contributed to the current physical, psychosocial and economic risks in townships (Du Toit et al., 2018). The apartheid regime had psychologically, materially and culturally devastating effects on the oppressed and caused estrangement, alienation and internalisation of violence – all of which are still evident, even after the demise of apartheid (Hook, 2013).

The risks associated with township residence includes poverty, poor access to resources and different forms of violence, such as violence in households, violence among peers and violence among community members (Cain et al., 2013; Makanga et al., 2017; Pritchett, Rochat, Tomlinson, & Minnis, 2013). The poverty in most South African townships is stressful and often psychologically disabling (Cain et al., 2013; Pritchett et al., 2013). Violence, absent fathers, lack of school-community participation and poor service access aggravate psychological pain (Ebersöhn, 2016, 2017; Theron & Theron, 2013).

Interpersonal violence prevails widely in our townships in South Africa and is associated with the abuse of alcohol and drugs such as cannabis or crystal methamphetamine. Substance abuse not only instigates interpersonal violence, but also has an impact on the socio-economic status of the people concerned, as it maintains the state of poverty in township communities (Makanga et al., 2017).

2.2.5 Conclusion to risk section

My literature review suggests that living in a petrochemical-affected township has physical, psychosocial and economic dangers. This urged me to look at how adolescents adapt positively despite this threefold risk.

2.3 RESILIENCE

Resilience is a complex process that draws on individual and ecological supports (Ebersöhn, 2017; Theron & Theron, 2013; Masten, & Obradovic, 2008; Rutter, 2012; Rutter, 2013; Malindi & Machenjedze, 2012; Masten, 2016; Ungar, 2015). According to Kumpfer (1999), the individual supports can be summarised under five domains: emotional characteristics;

physical well-being and physical competencies; behavioural and social competencies; cognitive competencies; spiritual or motivational characteristics. As a starting point, I summarised the individual support related to the resilience process as encountered in several studies in Table 2.1 below.

Table 2. 1 Summary of individual resilience factors

FACTORS	EXAMPLES	SOURCES
1. Emotional characteristics	Happiness; Recognition of feelings; Emotional management skills; Ability to restore self-esteem; Humour; Avoidance of negative emotions / self-distraction	Kumpfer, 1999; Malindi & Machenjedze, 2012; Theron, 2013; Van Breda, 2017a
2. Physical well-being and physical competencies	Good health; Health maintenance skills; Physical talent development; Physical attractiveness	DeSilva, Skalicky, Beard, Cakwe, Zhuwau & Simon, 2012; Collishaw, Gardner, Aber & Cluver, 2016; Kumpfer, 1999;
3. Behavioural and social competencies	Social skills; Problem-solving skills; Communication skills	Espinoza, Gillen-O'Neel, Gonzales & Fuligni, 2014; Flynn, Felmlee & Conger, 2017; Kumpfer, 1999; Turner & Madill, 2016
4. Cognitive competencies	Intelligence; Academic achievement; Moral reasoning; Insight; Self-esteem; Creativity	Ebersöhn, 2017; Kumpfer, 1999; Malindi & Machenjedze, 2012; Ungar, 2011; Rutter, 2012; Ungar, 2015
5. Spiritual or motivational characteristics.	Dreams and goals; Purpose in life; Existential meaning of life; Internal locus of control; Sense of protection; Hopefulness and optimism; Determination and perseverance	Kumpfer, 1999; Malindi & Theron, 2010; Van Breda, 2017a; Walsh, 2016

As my research centred on the social-ecological relationships that support older adolescents to adapt well to hardship, I then focused on the relationships that promote the resilience of adolescents. I summarised trends in the resilience literature that are relevant to my research focus and consequently divided the review into the following sections:

- Resilience and family relationships
- Resilience and friendship
- Resilience and relationships with service providers
- Resilience and relationships with religious (and other) leaders
- Resilience and relationships with local caring adults
- Resilience and relationships with spiritual beings
- Resilience and relationships with pets

2.3.1 Resilience and family relationships

A family in a South African context can be defined as a collective whole that encompasses all immediate family members (such as parents and siblings) and members of an extended family (such as uncles, aunts and grandparents) (Johnson & Quan-Baffour, 2015). A family plays an important role in the upbringing of adolescents which involves practices like child-rearing and collective parenting (Theron & Theron, 2013). A family is a social institution that provides love, security and protection for all who live in it (Raniga & Mthembu, 2016). Family can serve as a source of emotional and material support, and plays a vital role in the socialisation and/or adaptation of adolescents. The process of adaptation involves learning essential moral and cultural beliefs that are contextually related to the resilience process (Johnson & Quan-Baffour, 2015; Ungar, 2015). In the following subsections, I discuss each of these themes: family provides emotional support; family provides material support; and family promotes adaptation. This is to show how family relationships support the resilience of adolescents.

2.3.1.1 Family provides emotional support

An emotionally supportive family enables adolescents to adapt well to adversity and flourish in life (Becvar & Becvar, 2014). Emotional support in a family relationship is the type of support that entails a supportive relationship that lets an adolescent feel unconditionally accepted, loved and cared for. Such support scaffolds the resilience process (Louw & Louw, 2014; Theron & Malindi, 2013; Van Rensburg et al., 2018). The unconditional acceptance that an adolescent can gain from a family relationship requires listening to the adolescent and

validating their feelings. Unconditional acceptance creates a space for adequate emotional development, which can act as a barrier against maladjustment when an adolescent is faced with adversity (Berk, 2013; Van Breda, 2017a). Family-based care, such as the emotional support, warmth and love that all adolescents need, promotes their resilience and creates a sense of belonging to a family (Neal, 2017).

A study conducted by Diab, Peltonen, Qouta, Palosaari and Punamäki (2015) shows how an emotionally supportive family atmosphere promotes the resilience of both young and adolescent children in a family context. Their study analyses maternal attachment and supportive family atmospheres, and revealed that family is the main source of support contributing to a child's healthy development (Diab et al., 2015). It offers affiliation, which is mainly characterised by emotional support that acts as a protective barrier against trauma. This study suggests that the quality of a caregiving relationship between children and significant family members, such as mothers, fathers and siblings, results in positive adjustment and resilience of children, despite the negative psychological effects related to traumatic events (Diab et al., 2015). Furthermore, family relationships that manifest mainly in emotionally supportive affiliations enable a family to come together to make meaning out of adversity, and to share painful emotions such as sadness, suffering, anger, fear, disappointment and remorse. As a result, the resilience process in a family is promoted (Walsh, 2016).

South African research has reported similar results to those of Diab et al. (2015). For instance, a longitudinal research study that was conducted in South Africa by Cluver, Orkin, Boyes and Sherr (2015) consisted of 3 515 adolescents aged between 10-18 years from urban/rural sites in KwaZulu-Natal and the Eastern Cape. These young people had been exposed to traumatic events such as abuse, domestic violence, HIV Aids and other illnesses. The study suggests that family facilitated emotional support, warmth and love given to adolescents dealing with the effects of the past adversities and helped them combat the negative effects of stress and depression. A similar study by Bhana et al. (2016) conducted in KwaZulu-Natal focused on at-risk adolescents and investigated their physiological, psychological and social development, as well as the trauma associated with HIV-related illnesses. Adolescents benefited emotionally from their relationships with extended family members, including older siblings. The emotional support that they received from role-players in the extended family, like being given the chance to communicate their emotions, enable them to develop self-regulatory factors such as self-esteem, coping and self-efficacy – all of which predict positive development and resilience (Bhana et al., 2016).

2.3.1.2 Family provides material support

Material support that adolescents receive from family members includes money, clothing and shelter to meet their basic needs. Material support can enable the resilience process of adolescents (Munford & Sanders, 2015; Theron & Theron, 2013). Receiving material support from family members can act as a barrier against the harsh effects of adversity (Van Rensburg et al., 2013).

For example, a study conducted by Theron (2016) in the Free State province consisted of 1 137 youths in the Thabo Mofutsanyane District who were between 13-19 years old and were facing poverty-related personal and social risks. This research proved that the resilience process was facilitated when these adolescents had access to money and their mental needs were met. The financial support that adolescents received came mainly from female relatives, such as grandmothers and mothers. Munford and Sanders (2015) also report that the significant support that adolescents receive via caregiver relationships (such as with family members) gives adolescents from disadvantaged backgrounds access to resources and enables them to have some control over their harsh life circumstances.

2.3.1.3 Family promotes adaption

Resilience is a process of adapting to an adverse environment; this involves developing qualities and/or behaviours such as coping skills, and motivation and autonomy following significant adversity (Burt & Paysnick, 2012; Rutter, 2013). Adaptive behaviours are also modelled and reinforced by meaningful, caring relationships, such as the relationship with an adolescent’s family (Cluver et al., 2015; Diab et al., 2015; Theron & Theron, 2013). Behaviours that are modelled by an adolescent’s family range from educational achievement to adopting social norms like respecting their elders (Ebersöhn, 2017; Mosavel et al., 2015).

Parents also tend to monitor adolescent movement to support their adaptation in unsafe communities. Parental monitoring and supervision (e.g., knowing adolescents’ whereabouts) enhance the resilience of adolescents (Cluver et al., 2015). Support for adaptive behaviour is possible through an authoritative parenting style (Berk, 2013). An authoritative parent encourages the adolescent to behave independently but insists that certain limitations and controls be observed. These adolescents are allowed to reason with their parents and the parents give reasons for the rules and limitations that they set for their children (Berk, 2013; Louw & Louw, 2014). For example, Kenney, Lac, Hummer, Grimaldi and LaBrie (2015) conducted a study with 289 students from a West Coast university in the United States and revealed that an

authoritative parenting style is positively associated with adjustment and enhances the resilience of adolescents who come from a disadvantaged background. This study (Kenney et al., 2015) revealed that authoritative parenting predicted a higher grade/point average and better college adjustment (e.g. lower anxiety institutional attachment). An authoritative parenting style can also act as a protective barrier against destructive behaviours that are common in adolescence, such as alcohol and drug abuse, and it ultimately predicts the positive adaptation of adolescents who are facing significant adversity (Loredo et al., 2016).

2.3.1.4 Family: Concluding thoughts

In conclusion, I refer to a critical review of the resilience studies in South Africa (2009-2017) that was conducted by Van Breda and Theron (2018). This review, which included 61 journal articles, dealt with the personal, structural and spiritual layers of the socio-ecological approach to resilience. In 46 of the 61 studies included, relational resource-enabling resources were reported. These resources ranged from relationships with family members to other forms of relationships. However, none of the studies in this review or in the literature that I consulted had been conducted with adolescents aged 18-24 years who are living in a township *and* in proximity to the petrochemical industry.

2.3.2 Resilience and friendships

Peers can be sources of support, affection, stimulating companionship, help, and self-validation (Flynn et al., 2017). Peer friendships are influenced by a person's attachment style, closeness preferences, perceived support and gender social norms (Turner & Madill, 2016). Friends tend to share secrets and engage with one another on a deeper level in ways that can support self-efficiency, self-esteem and adjustment (Espinoza et al., 2014). Furthermore, friendships satisfy an adolescent's need for belonging, mutual engagement, emotional security and interpersonal exchanges. In the sections that follow, I discuss the following three themes relating to how friendships support the resilience of adolescents:

- Friends provide encouragement
- Friends provide practical support
- Friends give advice

2.3.2.1 Friends provide encouragement

Encouragement mainly involves boosting a friend's confidence and hope to face adversities that could otherwise predict negative life outcomes (Collishaw et al., 2016). Encouragement

also tends to offer short-term mood elevations and boosts an adolescent's ability to cope effectively with stress. Having an elevated mood helps adolescents withstand the negative effects of stress, which may lead to depression and other mental illnesses (Barlow & Durand, 2015). Friendship encounters that are encouraging enable adolescents to be resourceful and this contributes to positive life outcomes such as educational achievement, adjustment and psychological well-being (Espinoza et al., 2014).The encouragement that adolescents get from their friends mainly involves words of support and approval that have a positive impact and generate an inner strength or courage to face life adversities (Graber, Turner & Madill, 2016). Quite often, adversity is likely to predict negative outcomes such as vulnerability and low self-esteem, but the emotional support and encouragement that adolescents receive from their peers can act as a protective barrier against adversity (Kheswa & Shwempe, 2016). Encouragement fulfils the emotional needs of adolescents, especially in the case of disrupted family settings like divorce or the death of parents (Malindi & Machenjedze, 2012; Skovdal & Ogutu, 2012).

A study conducted by Graber et al. (2016) involved 409 socio-economically marginalised British adolescents aged between 11 and 19, and suggested that having a single and close supportive friendship (mainly characterised by providing encouragement) can facilitate psychological resilience in socio-economically vulnerable adolescents. A study conducted by Collishaw et al. (2016) on the mental health resilience of orphaned adolescents in an urban, informal settlement in Cape Town, South Africa similarly showed that the quality of peer relationships is one of the main predictors of resilient adaptation. Encouraging and supportive relationships with other adolescents helped address the psychological threats to their mental well-being associated with bereavement and impoverished living conditions.

2.3.2.2 Friends provide support

Friends' practical support entails material support, financial support, support with school or academic issues, and support with daily chores such as cleaning and taking care of siblings (DeSilva et al., 2012; Holder & Coleman, 2015). The practical support that adolescents get from their friends is meaningful and relevant to them, and therefore helps them be resilient, despite the challenges of adversity (Espinoza et al., 2014). Adolescents rely on and value the supportive relationships with their peers, because such practical support eases their burden of taking care of themselves and other siblings – especially when their parents are deceased (Skovdal & Ogutu, 2012).

A study by Skovdal and Ogutu (2012) involved 48 HIV-affected Kenyan children and revealed that orphans from families affected by HIV turned to friends for their resilience. Their friends were generally from similarly affected families. The practical help received included helping each other with schoolwork and household chores, income generation, material supplies, and food. The importance of the practical support gained from friends is that it takes away the burden from an adolescent who experiences adversity and allows them to feel that they are not alone and that someone cares (Malindi & Machenjedze, 2012). As a result, friendship acts as a protective barrier (Van Harmelen et al., 2016).

2.3.2.3 Friends give advice

The advice that adolescents get from their peers mainly relates to what needs to be done in a difficult situation (Skovdal & Ogutu, 2012). Such advice enhances their resilience and enables adolescents to function in congruence with the accepted societal norms and standards (Espinoza et al., 2014). It also helps them exhibit behaviours that are regarded as adaptive, such as educational achievement and respecting elders (Theron & Theron, 2013; Theron, 2016). Friends act as ethical templates of the societal norms and standards, and their advice can guide adolescents to flourish in life despite having suffered different adversities, such as the death of parents or disrupted family connections (Govender et al, 2017; Madhavan & Crowell, 2014; Malindi & Machenjedze, 2012; Petersen, Grobler & Botha, 2017).

A study conducted by Espinoza et al. (2014) involved 412 male and female Mexican high school students and investigated how affiliations and support from friends related to adolescents' school adjustment. Their study revealed that besides the negative effects that some peer relationships may have, they can also be associated with morally acceptable support such as offering advice that contributes to academic achievement (Espinoza et al., 2014). Friends can provide school or academic-related information, and can contribute meaningfully to each other's academic achievement by offering guidance that is in line with societal expectations, such as going to school (Ebersöhn, 2017). One of the key reasons why adolescents turn to their friends for advice is that friendships create a safe space where adolescents can freely speak about their concerns and issues (Louw & Louw, 2014).

2.3.2.4 Friends: Concluding thoughts

It is evident from the above studies that friendships can support and enhance the resilience of adolescents. Different studies (Collishaw et al., 2016; Espinoza et al., 2014; Holder & Coleman, 2015; Skovdal & Ogutu, 2012) found that relationships with friends have a positive

impact on the emotional, physical, academic and psychological domains of an adolescent's functioning. Being able to function adequately in different domains has been proven to be associated with enhancing the resilience process (Kumpfer, 1999).

Among the publications that I consulted, I found none that speak about friendships that promote the resilience of older adolescents (aged 18-24) living in townships located near petrochemical industry sites.

2.3.3 Resilience and relationships with service providers

Service providers are professionals from different disciplines, such as teachers, nurses, social workers, psychologists and other professionals who help adolescents in shelters, schools, juvenile correctional services, and other governmental and non-governmental facilities (Crush & Tawodzera, 2014; Clements-Nolle & Waddington, 2019). Relationships with service providers may be helpful relationships that are characterised by mentorship, care, and the provision of services (i.e. public health services, education, social services) aimed at enhancing the psychological, physical, emotional and financial well-being of adolescents (Schneider, Hlophe & van Rensburg, 2008; Thabede, 2014). The relationships they have with adolescents are usually based on professional ethics such as privacy and confidentiality, care, justice, and beneficence. Service providers also help adolescents who are facing different kinds of adversity to transition successfully to adulthood and achieve academically (Clements-Nolle & Waddington, 2019).

In this section, I discuss the themes that are linked to how service provider relationships support the resilience of adolescents:

- Service providers provide emotional support
- Service providers support healthy development and transition to adulthood
- Service providers support academic achievement

2.3.3.1 Service providers provide emotional support

Developmental trauma resulting from childhood adversity (such as loss of parents or exposure to violence and abuse) often results in feelings of rejection or feeling empty inside – thus leaving adolescents feeling emotionally vulnerable (Eisman, Stoddard, Heinze, Caldwell & Zimmerman, 2015). The resilience of adolescents who have faced traumatic childhood or adverse childhood experiences (ACE) is often aided by relationships that are formed with

service providers. Service providers may meet the needs of adolescents in a comprehensive way by providing not only services, but giving love, care and comfort, thus satisfying the emotional needs of adolescents and facilitating their emotional adjustment and resilience despite harsh living conditions (Van Rensburg et al., 2018). This kind of emotionally supportive relationship scaffolds resilience in that it enables an adolescent to experience a sense of belonging to feel welcomed and appreciated (Clements-Nolle & Waddington, 2019; Van Rensburg et al., 2018).

A qualitative study conducted in Norway by Gullbrå, Smith-Sivertsen, Graungaard, Rortveit, and Hafting (2016) examined how the general (medical) practitioner can support the resilience processes of adolescent children of ill or substance-abusing parents. The research used group-focused interviews to explore the experiences of adolescents who consulted general practitioners regarding somatic symptoms related to stress, worry, and the ambivalence of their daily lives. Results showed that general practitioners can provide education and information to adolescents and in doing so, they create a space where adolescents can express their emotions and can hope for better lives. This helps adolescents minimise the feelings of pity, anger, guilt, and anxiety that they face in their daily lives.

Similarly, Soleimanpour et al. (2017) conducted a literature review regarding service providers in the school context. They examined how service providers such as teachers, social workers and school psychologists can support the emotional adjustment of adolescents who had faced adverse childhood experiences, or been marginalised (e.g., adolescents who had been in foster care, homeless, substance dependent and/or who were lesbian, gay, bisexual, transgender and queer). They found that school-based service providers can alleviate the effects of traumatic stressors by providing confidential care, supportive words and evidence-based therapeutic interventions. Soleimanpour et al. (2017) further recommended that service providers intervene in the school context by teaching adolescents' yoga and meditation, both of which have a positive impact on regulating stress and emotions and on increasing adolescents' emotional resilience.

2.3.3.2 Service providers support healthy development

Relationships with service providers provide a space where adolescents can be heard and recognised, and where they can take part in activities in larger social systems (Sanders, Munford, & Liebenberg, 2016). This supports healthy development. When life adversities, such as the death of a parent(or parents) or poverty, threaten positive development or the

transition of adolescents to adulthood, then service providers can play an active role in ensuring that adolescents access the necessary resources in a way that relates to the culture and the context in which they find themselves (Ungar, 2015).

Van Breda (2017) conducted a study with 575 black, Indian, white and coloured South African adolescents who were aged 14 to 21 years and who come from distressed communities characterised by various risk factors (such as crime, poverty and family problems). This study made a comparison across different sites of individual, family and community protective factors. Van Breda's (2017) study resembles other resilience studies (Coetzee, Ebersöhn, Ferreira & Moen, 2017; Jefferis & Theron, 2017; Mampane, 2016; Sanders et al., 2016) in that relationships with teachers (as service providers) played a major role in the healthy development of adolescents. Teachers' model healthy adult patterns of living, provide spaces where adolescents can be heard and validated, and link adolescents to psychosocial services when necessary.

Similarly, the optimal development of adolescents in a resource-constrained community (e.g. living on the street) mainly depends on the services they receive from service providers (Theron & Van Rensburg, 2018; Ungar, 2018). For example, Malindi and Machenjedze (2012) report that street-connected adolescents depend on relationships established with service providers such as social workers and community workers. These service providers supported street-connected youths to tap into opportunities for support and provided opportunities to play with other children or to be taught basic skills that are relevant to life's demands.

2.3.3.3 Service providers support academic achievement

In the South African context, academic progress and achievement is related to psychological well-being and resilience, especially among black communities (Ebersöhn, 2017). Academic achievement – supported by service providers like teachers – is linked with positive life outcomes for adolescents, despite the harsh effects of adversity (Coetzee et al., 2017). Academic achievement is also promoted by school counsellors, mentors and hostel caretakers (Sanders et al., 2016).

Hall and Theron (2016)'s study of adolescents with intellectual disabilities attending special schools in Gauteng revealed that service providers such as teachers and sports coaches supported the adolescents' progress. By enabling constructive peer attachments, sports coaches helped adolescents engage in schooling. The supportive relationship with teachers helped the learners overcome a poor self-image and low self-worth, and to adjust well to their

environment. Liebenberg et al. (2015) also reported that teacher-learner collaboration, which involves working interdependently to develop empowering and respectful relationships, can serve to create positive student identities and improve learner engagement and academic performance.

2.3.3.4 Service providers: Concluding thoughts

In summary, various studies – both national and international (Malindi & Machenjedze, 2012; Sanders et al., 2016; Masten, 2016; Wessells, 2015; Van Breda, 2017) – prove that relationships between children/adolescents and service providers are vital for boosting young people's resilience. Although there is literature on mental health professionals supporting the resilience of adolescents (Soleimanpour et al., 2017; Zeeman, Aranda, Sherriff, & Cocking, 2017), this was not reported often in the South African resilience literature (Van Breda, 2017; Theron, 2018). This could relate to mental health services being inaccessible to most South African adolescents. Judging from the literature review I conducted, it is therefore necessary to further investigate the role that relationships with various service providers plays in facilitating the older adolescent's resilience process in a South African petrochemical township context.

2.3.4 Resilience and relationships with religious (and other) community leaders

Community leaders are people who have been chosen by the community or self-elected individuals who lead and initiate community based projects (Cornish, Campbell, Shukla & Banerji, 2012). Religious leaders, on the other hand, act in the capacity of having been spiritually called to provide services to religious communities (Hope et al., 2017). Both community leaders and religious leaders offer services to the people in the community that they are serving (Burnette & Hefflinger, 2016). Their services help residents cope with the adversities that are likely to threaten their well-being (Surtiari, Djalante, Setiadi & Garschagen, 2017). The relationships that adolescents form with religious and other leaders can play an important role in their resilience (Hope et al., 2017; Thornley, Ball, Signal, Lawson-Te Aho & Rawson, 2015). I discuss two themes in this regard:

- Religious leaders provide emotional support
- Leaders provide practical support

2.3.4.1 Religious leaders provide emotional support

The resilience of adolescents is closely linked to their emotional well-being, which entails feelings of being loved, being cared for and being supported (Hope et al., 2017). Emotional

support can be facilitated by religious leaders through counselling, prayers and motivation. These inspirational words and activities serve the purpose of edifying, giving courage and strength, as well as assisting adolescents to derive meaning from current or past adversities (Dreyer, 2015).

A study conducted by Ager et al. (2014) investigated the effective engagement in psychosocial and related support for vulnerable children by local faith-inspired groups in sub-Saharan Africa. Their study revealed that the resilience of adolescents who belong to faith organisations is promoted by prayer leaders, priests and religious communities who offer words of encouragement, faith-based counselling and other forms of support. The support they receive from leaders and religious communities helps the adolescents to create meaning from adversity and recover from trauma – which ultimately contributes to their psychological adjustment (Ager et al. 2014). Likewise, a cross-sectional study conducted by Hope et al. (2017) involved 1170 black adolescents in America diagnosed with a psychiatric disorder revealed that the adolescents who were part of this study experienced love and felt that they were cared for in religious organisations. The quality of relationship they had with religious leaders and other members of these organisations assisted them to talk about their problems without feeling judged or misunderstood (Hope et al. 2017).

2.3.4.2 Leaders provide practical support

Practical support that community leaders provide to adolescents includes health services and social services (Thornley et al., 2015). The resilience of adolescents living in communities is boosted by community leaders who build on that community's strengths and create available resources (human capital; correctional facilities/prisons; clinics; schools) to ensure that relevant services are offered to community members (Matarrita-Cascante, Trejos, Qin, Joo, & Debner, 2017). A quantitative study conducted by Şimşir, Seki and Dilmaç (2018) involved 470 male and female adolescent students studying at religious schools in Konya, Turkey. Their study looked at 'instrumental' support that adolescents receive from people such as religious leaders, and how this support is linked to spiritual well-being. Instrumental support that adolescents receive from significant people around them (including religious leaders) included money, time, and help with tangible things. Such support increased adolescents' self-esteem and had a significant positive impact on their mental health and overall well-being (Simsir et al., 2018). Similarly, a study conducted by Thornley et al. (2015) in six communities in New Zealand focused on leaders' support of community resilience after a devastating earthquake. The disaster resulted in the loss of public facilities which then had negative psychological

effects such as stress and anxiety on the communities concerned. Tribal leaders and other community leaders supported local residents' resilience by offering practical support such as funding, social support, and advocacy.

2.3.4.3 Relationship with leaders: Concluding thoughts

The relationships that adolescents form with religious and other community leaders may enable them to be resilient (Dreyer, 2015; Edwards et al., 2014; Jones, 2007; Nguyen, Bellehumeur & Malette, 2015; Rahmati, Khaledi, Salari, Bazrafshan & Haydarian, 2017; Thabede, 2014). It is, however, not clear whether this applies to older adolescents in petrochemical affected townships.

2.3.5 Resilience and relationships with caring local adults

Caring local adults are people who live in the same neighbourhood or community, who do not have family ties or service provider ties with an adolescent, but who care enough to support the resilience of that adolescent by giving advice, emotional support, and by providing for the adolescent to meet their needs (Theron, 2016). According to Malindi and Machenjedze (2012), these adults serve as mentors and ethical 'templates' in adolescents' lives. The local caring adults can include elderly people in the community, people who belong to a profession/trade, or people who are unemployed (Ebersöhn, 2017).

I discuss how local caring adults act as mentors and role models, as well as how they offer emotional support to enhance the resilience of adolescents.

2.3.5.1 Local caring adults as mentors and role models

Resilience is a culturally and contextually bound phenomenon, and can be modelled and reinforced by adults who act as mentors and role models (Fazel & Betancourt, 2018; Schelbe & Geiger, 2017). Mentors play an active role in assisting adolescents develop self-esteem and self-confidence, and make choices regarding their education and personal development (Mezey et al., 2017). Through their mentorship and role modelling, local caring adults enhance the social bonding and sense of belonging of adolescents to the community.

I believe that such caring and modelling of adolescents' behaviour by local caring adults' links strongly with *ubuntu*. Many African and other collectivist communities cherish and celebrate interconnectedness and close relationships – a person is never seen in isolation from the community they belong to (Theron & Phasha, 2015). 'Personhood' in an African context is to be relationally defined as a person who does not exist alone, but who belongs to the community

(Mkhize, 2006). This philosophy propels local caring adults to be active role players in the lives of local adolescents.

A study conducted by Yeh et al. (2015) of historically marginalised Samoan American youths addressed several social and emotional issues that bring forth educational challenges, negative cultural identities, and overall maladjustment in the community. This study revealed that social issues such as racism or being negatively stereotyped have a negative impact on adolescents' interest in schooling, and their general motivation in life. Furthermore, Yeh et al. (2015) found that culturally-based community intervention such as the involvement of local caring adults promoted the resilience of the school-going adolescents who participated in the intervention. As part of this intervention, locals motivated participating adolescents to be proud of their ethnic heritage and to enact caring behaviours (Yeh et al., 2015). They did this by sharing their wisdom and past experiences with these adolescents. In other words, Yeh et al.'s study (2015) shows that the involvement of role models in adolescents' lives serves as a culturally and contextually bound pathway that adolescents follow to boost their resilience (Theron & Theron, 2013). Similarly, Marston (2015) has argued that the spirit of Ubuntu keeps adolescents connected to their communities and allows local adults to be involved in their lives by passing on certain skills and qualities that are necessary for adolescents' ability to cope with adversity. Mentorship relationships that adolescents have with local caring adults promote the active participation and sense of belonging of such adolescents in the community (Marston, 2015).

2.3.5.2 Local, caring adults offer emotional support

Local, caring adults can offer emotional support to adolescents by speaking encouraging words and providing comfort. This support mostly benefits adolescents who do not have any support from immediate family and relatives, due to the death of parents or other adverse childhood experiences (Wexler, Dam, Silvius, Mazziotti & Bamikole, 2016). A study conducted by Wexler et al. (2016) in Alaska, involved 355 adolescents between the ages of 10 and 20 years old, who were faced with various risk factors such as substance abuse, suicide and sexual risk-taking. They (Wexler et al., 2016) found that caring local adults' engagement in adolescents' lives could be associated with positive youth development, particularly for marginalised groups living in this area. The study revealed that about 72% of adolescents reported that elderly members of the community were kind to them and gave them emotional support (Wexler et al. 2016). In a similar study, Neal (2017) reveals that foster youth in the United States who matriculate from high school and must transition to post-secondary education at highly selective institutions, often rely on their relationships with caring adults for emotional support.

These relationships with local caring adults enable the adolescents to cope with trauma and instability in their lives, and they ultimately manage to perform well at the post-secondary education institutions. The support they receive from local adults enables them to adjust well to life's demands and to flourish, despite past or present adversities (Neal, 2017).

2.3.5.3 Relationship with caring local adults: Concluding thoughts

Based on the literature I consulted (Matolino & Kwindingwi, 2013; Marston, 2015; Neal, 2017; Wexler et al., 2016), local caring adults can enhance the resilience of adolescents – especially in collective community contexts such as in South Africa. As a researcher, I intend to examine whether older adolescents living in the eMbalenhle township report that relationships with local caring adults have a beneficial impact on their resilience.

2.3.6 Relationship with spiritual beings

Relationships with spiritual beings refer to any type of relationship that adolescents form with spiritual beings such as God or their ancestors. Typically, this relationship is established based on a spiritual and cultural belief systems and related norms and values (Iglesias & Marquez, 2019; Penney, 2017; Theron & Theron, 2013). Adolescents' relationship with spiritual beings enhances their resilience by facilitating their meaning-making processes in adversity. A relationship with a spiritual being facilitates both hope and emotional comfort. It offers the adolescents a safe space in which they can express their feelings and vulnerabilities and where they may seek help – through prayer, meditation, dance and other rituals (Johnson & Quan-Baffour, 2015).

Relationships with spiritual beings have been reported in several South African resilience studies (Jefferis, Van Rensburg & Theron, 2019; Nguyen et al., 2015; Rahmati et al., 2017; Thabede, 2014; Theron & Theron, 2013). For example, a study conducted by Phasha (2010) among black, female abuse survivors aged 16 to 23 years showed that spiritual connection plays an important role in how young people interpret negative life experiences. Connection with a spiritual being offered comfort, alleviated negative or guilt feelings, and encouraged a sense of security for these female adolescents. It also facilitated a positive outlook on life and inspired hope about the future.

However, evidence from the literature (Chaux & León, 2016; Chan et al., 2016) points to the fact that relationships with spiritual beings can also have a negative impact on adolescents who are going through devastating life events. Adolescents experiencing adverse events may well

attribute such devastating events to God or their ancestors and see it as a punishment. Such an attitude can have a negative emotional and psychological impact on adolescents.

2.3.7 Relationships with pets

According to Jacobson and Chang (2018), pets contribute to the development of empathy and pro-social behaviour in adolescents. In their systematic review of adolescents' well-being and pet ownership, Purewal et al. (2019) found that pets also play an important role in the optimal development of children and adolescents. Their review established that pet ownership contributes positively to the overall emotional well-being of adolescents. Adolescents who have pets have a decreased level of anxiety, depression, and fewer behavioural and social problems. Fedor (2018) found that therapy dogs play an important role in emotion regulation processes and in helping adolescents who are attending school to feel connected to their environment. Moreover, emotional regulation can act as a protective barrier in the treatment of mental health disorders (Sato et al., 2019).

Although pets can play a significant role in the emotional well-being of adolescents (Jacobson & Chang, 2018; Purewal et al., 2019; Sato et al., 2019), ownership of pets is associated with socio-demographic and economic factors such as the number of people living in the household, as well as parents' level of education and social class (Purewal et al., 2019). In a South African community context, owning a pet may be challenging, given high poverty and unemployment rates and the costs of caring for an animal (Erten, Leight & Tregenna, 2019). I believe this may also have an impact on the number of adolescents who are able to own pets at home, as they also need to feed and care for these animals.

2.3.6 Conclusion to resilience section

I could find no study about relationships supporting older adolescent resilience in a township context characterised by challenges associated with petrochemical pollution. Resilience theory shows that context influences the availability of resources, as well as adolescents' ability to navigate these resources (Ungar, 2015). Therefore, it seems that resilience is sensitive to the context in which adversities occur and this specific context will shape the way in which the resilience process plays out (Malindi & Machenjedze, 2012; Theron & Phasha, 2015; Theron & Theron, 2013; Ungar, 2011; Ungar, 2015). I concluded that there is a clear need to explore the relationships that support the resilience of older adolescents living in the context of petrochemical affected townships, and what about these relationships enables resilience. In the next chapter, I explain the research that I did to address this need.

CHAPTER 3

RESEARCH METHODOLOGY AND DESIGN

3.1 INTRODUCTION

In this chapter, I describe the process that I followed while conducting my research, including information about my participants, the data generation and analysis processes, how my study met the quality criteria, and how I adhered to ethical standards throughout the study.

3.2 SITUATING MY STUDY OF LIMITED SCOPE IN THE RYSE STUDY

As mentioned in Chapter 1, my study was part of the RYSE study in South Africa. The chosen research site was eMbalenhle (a township close to the SASOL plant in Secunda, Mpumalanga). Within the broad scope of the RYSE study, I chose to focus on relationships in the socio-ecology that promote or support the resilience process of older adolescents. I worked with the RYSE community advisory panel (CAP) to recruit my research participants. The panel was established to guide our (four Master's in Educational Psychology students from the University of Pretoria engaged in the RYSE study) work with participants to generate data. My fieldwork was done on 14 April 2018. I chose a qualitative data research design and used visual methods to generate data. In summary, although RYSE supported my access to participants and provided the codebook that informed my deductive analysis, I mostly worked independently to choose and carry out my research design.

3.3 PURPOSE OF THIS STUDY

The purpose of my qualitative study was to explore which relationships older adolescents living in eMbalenhle identify as resilience-enabling, and to determine what about these relationships is resilience-enabling. The literature review conducted in Chapter 2 found no evidence of empirical research done in a South African township near a petrochemical industry site. Limited research has been done on the resilience process of older adolescents living in a township and the relationships that facilitate this process (Van Breda & Theron 2018). The nature of my study was therefore exploratory and aimed at investigating a comparatively under-researched topic in research (Creswell & Plano Clark, 2011). The advantage that comes with an exploratory study is that insight into or a deeper understanding of a new topic is generated.

However, the disadvantage of this approach is that it is subjective, which means it can be biased towards the researcher's perceptions and interpretations of what is found in the data (Creswell, 2014). In my study, this limitation was addressed through my use of the established RYSE codebook and comparison with the protective resources reported in the existing South African literature.

3.4 PARADIGMATIC PERSPECTIVE

3.4.1 Meta-theoretical paradigm

This research was based on the socio-constructivist epistemology, which entails looking at the subjective meanings of people's experiences (Diaz, 2015).The socio-constructivist epistemology goes against the positivist view that knowledge is objective, unbiased and universal; it acknowledges the contextual and cultural specificity of knowledge and the important role that language and discourses play in constructing meaning that is co-owned by people in a specific socio-cultural space (Becvar & Becvar, 2014; Burr, 2015; Gergen, 2001). This perspective allowed me to tap into the world of my participants to understand the deep meanings of their narratives (Corey, 2019).

The socio-constructivist epistemology takes a post-modernistic stance on how truth and reality are described (Gergen, 2001). It states that truth does not only exist in the outside world but can be constructed as people make meaning of and interpret their experiences. This means different communities can construct different meanings out of similar experiences. The theory consequently takes into consideration subjective meanings and the lived experiences of people embedded in their culture and context (Creswell, 2014; Gergen, 2001). The subjective perceptions or lived experiences of older adolescents in a semi-rural township located near the petrochemical industry were my focus. These older adolescents were facing environmental and structural challenges related to their living context. By drawing on this paradigm, I invited participants to give a detailed report on the specific relationships that contributed to their resilience process.

One of the challenges of the socio-constructivist approach is that the researcher's voice, perceptions and biases may overshadow those of the research participants (Terre Blanche et al., 2006; Creswell, 2014). Poor listening and interpreting skills constitute a further potential threat to the research, together with factors such as the researcher's inability to successfully enter the world of the participants and the researcher's lack of self-awareness during the research process (Terre Blanche et al., 2006; Creswell, 2014).

To manage this potential disadvantage, I had to immerse myself in the language and culture of the participants by listening to the audio-recorded interview repeatedly. The declaration of my assumptions in Chapter 1 (Section 1.7) compelled me (prior to data collection) to reflect deeply about my expectations, ideologies and perceptions regarding the participants in, as well as the results of my study. This served as a starting point to evaluate based on the data whether what I had expected initially was either supported or disputed by my participants. Furthermore, declaring my assumptions helped me immerse myself in the data and do meta-reflection after data collection. Meta-reflection is a process of reflecting on my initial thoughts and perceptions to see if my conditioning perhaps clouded the analysis of the data that emerged from my study (Maree, 2016). I did this to gain a deeper insight into my participants' motivations and insights, as well as into the contextual factors and underlying reasons for certain behaviours and practices (Burr, 2015). I also regularly did some self-reflection and remained in ongoing contact with my research supervisor and fellow RYSE students in the process of reporting my themes.

3.4.2 Methodological paradigm

My study was guided by the qualitative research methodology, which is an approach that seeks to understand reality from the participant's perspective (Terre Blanche et al., 2006; Creswell, 2014). The qualitative approach sees human behaviour and experience as valid when they are reported in a subjective manner. Qualitative research also involves an analysis of the nature, quality and meaning of experiences and takes the context into consideration (Bryman, 2001; Kvale, 2008; Terre Blanche et al., 2006; Willig, 2019). The research data used in the qualitative methodological paradigm is usually drawn from a small number of participants and data is generated by means through which rich, detailed and heavily contextualised set of information is elicited (Levitt, Bamberg, Creswell, Frost, Josselson & Suárez-Orozco, 2018).

This methodological paradigm is most suitable, given that my research question explores the relationships that support the resilience process of older adolescents in a community affected by typical township and petrochemical industry risk factors. Older adolescents living in a semi-rural township community near a petrochemical industry in South Africa have not been well studied in terms of resilience. Therefore, my quest was to gain a deeper insight into their socio-ecological relationships. Qualitative methods are important in this regard because they can be used to develop a theory or attune understandings and come up with findings that are bound to people's contexts (Levitt et al., 2018).One potential limitation of the qualitative paradigm is that the researcher may be subjective, and may interpret findings based on position, experience

and assumptions (Bryman, 2001). As mentioned above, to ensure that this would not occur, I used the RYSE study's codebook to code my data. As explained in 3.5.4, a team of RYSE researchers under the leadership of Professor Michael Ungar, the principal RYSE investigator, developed the codebook. I also compared my research findings to the existing resilience research output in South Africa, which helped me to report my data findings in an objective way.

3.5 METHODOLOGY

3.5.1 Research design

My study adopted the phenomenological research design, which refers to a study of personal or lived experiences that requires the researcher to have a deep insight into and clear interpretation of a phenomenon experienced by research participants (Diaz, 2015; Kafle, 2011; Willig, 2019). The phenomenological approach emphasises that things are based on how they appear to the participants. This means that the individual's perceptions and subjective view of the experiences of the research participants play an important role in understanding a certain phenomenon (Diaz, 2015; Kafle, 2011).

The advantage of this design is that it seeks to tap into the participants' body of knowledge of their everyday experiences about the phenomenon being studied (i.e. which relationships enable resilience). I drew on my participants' knowledge and experiences to arrive at a more complete understanding of the relationships that enable their resilience. The potential shortcomings of a phenomenological research design are when the researcher fails to consider the whole phenomenon but reduces it to causes and effects. The research data is also sometimes over-analysed and the concepts and ideologies of the participants are interpreted from the researcher's own viewpoint, rather than acknowledging and embracing the unique world of the participants (Becvar & Becvar, 2014). Another potential disadvantage would be when participants are hesitant to share the deep meaning that they attach to the phenomenon being studied (Diaz, 2015; Kafle, 2011).

I tried to counteract the potential disadvantages of the phenomenological research design by adopting several strategies. For instance, I listened repeatedly to the audio recording of my interview to become familiar with the words of the participants in the study and to develop a holistic sense of the relationships that enable the resilience of older adolescents in eMbalenhle (Creswell, 2014). I also tried to immerse myself in their situation, and to reflect on as well as ask questions about what they reported. This allowed me to 'depart from my world and get into

the world of my participants' so that I could try to adopt their perspective and feel what they were feeling as they narrated their stories (Becvar & Becvar, 2014, p. 16).

3.5.2 Participants

Eight participants were recruited by the Community Advisory Panel (CAP) of the RYSE study. The CAP is a group of people from the selected community who are involved in all phases of the research. They assist in the research process by providing advice about informed consent, research protocols, and implementation of research (Theron, 2013). They also play a significant role by engaging the community to speak about the risks, benefits and implications of the research in a culturally sensitive manner (Quinn, 2004; Strauss et al., 2001)). In my study, the CAP consisted of a group of six young adults from eMbalenhle who were recruited by the RYSE to assist in the recruitment of participants as well as to perform other advisory roles in the implementation of the research.

As indicated previously, participants were recruited using purposeful sampling. I provided the CAP with criteria to guide the recruitment as suggested by Bryman (2001). In other words, a purposive sample of young adults was recruited from the eMbalenhle community. The first two criteria for inclusion were that all participants had to be aged between 18-24 years, and they had to be able to speak, read and write English. However, if participants preferred to engage in another language, they were encouraged to do so and members of the research team or others in the group were asked to translate into English so that researchers who speak English can also understand. Furthermore, they had to be living in the eMbalenhle-Secunda area, and they had to have been affected (negatively or positively) by the petrochemical industry. The purposive sampling method was used because it is simple, convenient and cost effective (Diaz, 2015; Kafle, 2011). When researchers use purposive samples, they rely on the availability of a sample of individuals from the population that has the potential to answer the research question (Diaz, 2015; Terre Blanche et al., 2006). The advantage of purposive sampling is that the sample of participants may provide the researcher with the most relevant information about the topic being studied (Diaz, 2015).

Purposive sampling unfortunately also has a potential shortcoming in that it is not necessarily representative. This would mean that there can be other participants with contradicting evidence or views (Bryman, 2001; Diaz, 2015). To overcome this challenge, it is necessary to confirm the outcome of a study as to the credibility of the results of the study. I will discuss this in more detail under Section 3.6.1 (credibility).

Eight participants generated the data that I used in my study. They agreed that I could use their real names for my transcript and research report. None of them reported that they were still in school. Their demographic information is summarised in Table 3.1.

Table 3. 1: Participants' background information

Name	Age	Gender	Ethnic group	Background information
Thuso	18	Male	Sotho	Unemployed. Raised by a single parent (father).
Siyanda	24	Male	Zulu	Unemployed. Raised by a single parent (mother).
Sibusiso	24	Male	Zulu	An orphan. On a leadership programme. Raised by his grandfather.
Tshiamo	21	Male	Sotho	Unemployed. Raised by a single parent (mother).
Pule	24	Male	Sotho	Unemployed. No further background information disclosed.
Thuto	22	Male	Sotho	Unemployed. Mother passed away. Raised by a single parent (father).
Thabang	24	Male	Sotho	An orphan. Works as a merchandiser.
Nhlanhla	18	Male	Zulu	Unemployed. Lives with his grandmother.

All the participants in my study came from eMbalenhle, a township located in the Govan Mbeki District of the Mpumalanga province of South Africa. The eMbalenhle community is situated near a petrochemical industry site. According to Census 2011, eMbalenhle covers an area of 19.65 km^2 and has a population of 35404 people and 11889 households. About 49.82% of the population speak isiZulu, followed by isiXhosa (10.90%), Sesotho (10.10%) and isiNdebele (9.11%). The minority ethnic groups in eMbalenhle are Setswana-, Afrikaans- and Tshivenda-speaking people. According to the 2016 Census Report for Mpumalanga (where the eMbalenhle township is located), it remains one of the provinces that has a low usage of electricity as cooking source; about 77,3% of its population have safe drinking water and it is

rated as one of the highest-risk provinces in terms of crimes such as housebreaking and burglary (Census, 2016).

Prevalent crimes in this area from 2009 till 2018 are murder, sexual offences, attempted murder, assault with the attempt to inflict grievous bodily harm, common assault, and common robbery (Crime Statistics South Africa, 2018). According to Mathebula, a local reporter from *The Ridge Times* (1 September 2018), police are concerned over recent murders in eMbalenhle. Locals blame these killings in the township on gangs that are allegedly terrorising the area. These gangs consist of youths between 16 and 30 years old who often commit their crimes at night.

Figure 3. 1: eMbalenhle is adjacent to a petrochemical plant

Figure 3. 2: Mandela section (next to Chisanyama), eMbalenhle

Figure 3. 3: Extension 7, eMbalenhle

3.5.3 Data generation

In April 2018, I went to eMbalenhle along with three other master's students and two honours students who are also involved in the RYSE study. The group interview was conducted at Sasol Sports Club hall and consisted of only one session. To generate data, I used photo-elicitation and semi-structured interview. Photo elicitation is an interview method in research that uses visual images to stimulate a conversation (Diaz, 2015). Prior to the interview, members of the CAP had asked the participants to bring one or more printed or electronic photos that depict relationships that enable adolescents to be strong or OK when life is hard. Five of the eight participants brought photographs with them. These photos were used to start a conversation and helped the participants talk about the research phenomenon being explored (i.e. the relationships in their socio-ecology that are resilience-enabling and how these relationships

enable resilience). Three of the participants did not bring photographs because they did not have smartphones that could store photos. Since I had anticipated that this may happen, I took a few magazines with me to the interview. A picture in the magazine could be representative of someone like a mother, grandmother, grandfather, or friend, and participants could use these pictures instead of the photos. I had to improvise with an understanding that qualitative work is emergent (Terre Blanche et al., 2016).

At the beginning of the interview, to manage group dynamics we did set ground rules. I also maintained my role of facilitating the participants' interactions throughout the group interview. This facilitator role helped in ensuring that all participants adhere to the rules and no one feels threatened to voice their opinions (Bryman, 2001; Terre Blanche et al., 2006). In light of this, I did not experience any group dynamics challenges; my participants demonstrated respect for each other's views and none of my participants dominated the group.

In my study, photo elicitation was useful in that it gave participants the opportunity to think deeply and speak without limits about the relationships that enable adolescent resilience (Diaz, 2015; Kafle, 2011; Liebenberg, Ungar & Theron, 2014). This may have been because images have become a dominant feature in young people's lives globally (Poku, Caress & Kirk, 2019). I experienced that photographs can be used as prompts because they enhance the quality of the narrative data and help to calm the respondents so that they can speak freely (Diaz, 2015; Kafle, 2011; Poku et al., 2019).

To understand the significance and meaning that the participants attach to the photos, participants were interviewed by means of semi-structured interviews. A semi-structured interview is a type of interview that consists of a list of questions prepared prior to the interview. However, the interviewer does not necessarily adhere strictly to the list of prepared questions. The semi-structured method entails also asking open-ended questions that allow for free discussion with the interviewee (McIntosh & Morse, 2015; Terre Blanche et al., 2006). As explained next, I wanted to know what the photographs explained about resilience-enabling relationships. For the rest, I probed participants' response. To conclude, I asked them if they wished to add anything.

I interviewed the participants in a group since group interviews are cost-effective and flexible (Bryman, 2001; Terre Blanche et al., 2006). In the group interview sessions, I set the stage by introducing myself and asking the participants to introduce themselves (Terre Blanche et al., 2006; Kafle, 2011). To establish rapport with the participants, I used the Masekitlana

indigenous game (John, 2013; Joseph, Ramani, Tlowane & Mashatole, 2014). This involved introducing myself as Mthandeki (my first name) from Parys in the Free State, a student from the University of Pretoria, who is interested in knowing which relationships support eMbalenhle adolescents to be strong in difficult life situations. Although being able to converse in English was one of the criteria for inclusion in the RYSE study, I was able to accommodate my participants if they chose to use another South African language, as I speak several local languages (including Sesotho and Setswana, isiZulu and isiXhosa). I furthermore assured my participants that if there was something that they wanted to express in their own language and that I would not understand, one of the community advisory panel members would be there to assist us.

To start the conversation about the photographs, I said: “Using the photographs you brought or something that you have selected from the magazine, briefly tell us about the relationships that support you or other adolescents in eMbalenhle to do well or be strong in life when difficult situations strike.” A prompt, such as the one I used, helps participants start engaging meaningfully in the interview conversation (Diaz, 2015; Kafle, 2011). I expected that participants would engage deeply and meaningfully if they came with photos that relate to what they were going to speak about. The participants immediately asked a few questions, such as “Are we only allowed to speak about people that appear in our photographs or can we also speak about other family members or friends that do not appear in our photos?” I told them that it was okay if they wanted to include other people in their narratives. All the participants seemed to be comfortable with speaking English.

In addition to the first (photo) prompt, I used a probing technique that involved asking participants questions such as “How does this relationship support resilience?”. The purpose of probing is to obtain rich data regarding the phenomenon that is under study (McIntosh & Morse, 2015). During the group interview, a tape recorder was used with the participants’ permission. This allowed me, as the researcher, to access the data after the interview for data analysis purposes (Bryman, 2001; Terre Blanche et al., 2006). The recording helped me go through the interviews several times and gain a deeper understanding of the subjective world of my participants in a scientific manner (Bryman, 2001; Kvale, 2008; Terre Blanche et al., 2006). At the end of the session, participants also sent me their electronic photographs. With their permission, I stored these on my tablet to use them in the transcript and research report. I took photos of non-electronic photos as well.

3.5.4 Data analysis

Qualitative data analysis involves the subjective interpretation of research content by coding and identifying themes in the data (Terre Blanche et al., 2006). This can be done by either allowing themes to emerge from the data itself, which is known as inductive data analysis, or the researcher can use the existing theory or an existing codebook to deduce themes from the data. The latter method is called deductive data analysis (Braun & Clarke, 2006; Ngulube, 2015). The RYSE study, of which my study is a part, established a codebook based on Ungar's (2008, 2011, 2015) Socio-Ecological Resilience Theory (SERT). The RYSE codebook was co-developed by the Canadian and South African teams. In the first two phases, the principal investigator (Michael Ungar) and two researchers with post-graduate qualifications each independently open-coded three Canadian transcripts. Following a consensus discussion, they used the assigned codes to develop a single codebook and then invited two other researchers to code three more Canadian transcripts. All five then met in a joint coding session to evaluate and refine the codes. This refined version was sent to the South African RYSE team to test on the South African data. Following coding of 10 South African transcripts by the principal co-investigator (Linda Theron) and two South African researchers with post-graduate qualifications, the SA RYSE team suggested additional codes. The codes developed by the Canadians and the South Africans constitute the RYSE codebook. The codebook includes 9 code groups, one of which is relationships (Twum-Antwi, E., personal communication, January 21, 2020).

I chose to use the RYSE codebook because of its ready availability. In addition, the relational codes – meaning the codes that relate to who enabled the resilience of participants in the RYSE project (e.g. family relationships; peer relationships; role models) – did not show saturation in the 2017 South African data (Ungar & Theron, 2018). For this reason, I applied these relational codes to test how well they fit the accounts of older adolescents living in eMbalenhle. In other words, I applied a deductive data analysis (Braun & Clarke, 2006).

The advantage of applying these pre-existing relational codes is that they have the potential to use insight generated from previous research to answer a specific research question (e.g. which relationships matter for the resilience of adolescents living in eMbalenhle and in what way do these relationships matter). Furthermore, they can challenge existing understandings of resilience-enabling relationships (Creswell, 2014). The disadvantages of using a priori codes could lead to narrow understanding (Creswell, 2014). However, to guard against this potential disadvantage, I worked with my theoretical framework in mind, and considered which codes

did not fit the data and possible reasons for that. I also added codes to fit data that could not be coded using the RYSE code book. I followed the six steps below to analyse my study data deductively, as advised by Nieuwenhuis (2016):

Step 1: Immerse yourself in the data

I transcribed the interview and this helped me understand the data. After this, I read the transcripts many times and made notes on the data received from the research participants. I also included the visual data obtained from the participants into my transcript. I studied the existing relationship themes and their descriptions as contained in the codebook to familiarise myself with the pre-existing relational codes.

Step 2: Search data that matches the codes in the codebook

I repeatedly read the transcripts and located data segments/photographs that include accounts of the relationships that support older adolescents' resilience. I also identified how these relationships manage to support the resilience of older adolescents through my use of the relational codes in the RYSE project codebook. I had the following codes to choose from:

Relationships	Description
General	Any reference to the role of personal relationships – positive and negative – in the life of an individual or in the context of the community. Descriptions of feelings that opinions are valued; feeling respected; being able to open up or share perspectives freely
Friends: Advice (EM)	Any reference to friends advising/guiding/ telling what should be done
Advisor/Role model	Relationships with teachers and coaches/mentors in and out of school EM: Family role models and/or community members/peers who model success/adjustment or motivate/mentor the participant
Co-workers	Relationships with co-workers and 'bosses'
Family	Relationships with immediate and extended family and discussions of family dynamics Support from family (double code also as support)
Family: Advice (EM)	Any reference to advice/guidance from family
Family: Financial support (EM)	Reference to a family being able to provide for basic needs because family members are employed and/or young persons reciprocate where possible
Friends/ Peers	Positive and negative aspects of relationships with friends; peer pressure

Mental health professionals	School counsellors, psychiatrists, doctors, nurses
Online relationships	References to friends or online relationships; Social media; Cyber-bullying
Partners	References to romantic partners – boyfriend/girlfriend/spouse/common-law partner
Pets/Animals	References to relationships with pets or other animals
Strangers	Reference to meeting and connecting with new people/random encounters or acquaintances within the community

I managed the above process by using an ATLAS.ti 8 computer program. This program is used in qualitative data analysis and helps the researcher manage, organise and code data more effectively (Maree, 2016). I imported an MS Word document consisting of my transcript, as well as the RYSE codebook using the codebook function, into ATLAS.ti 8. I subsequently had to delete irrelevant information from the codebook, such as codes that do not speak about relationships. I did this so that I would be able to work effectively without any disturbance when using this program.

Examples of how I matched three different codes to my data:

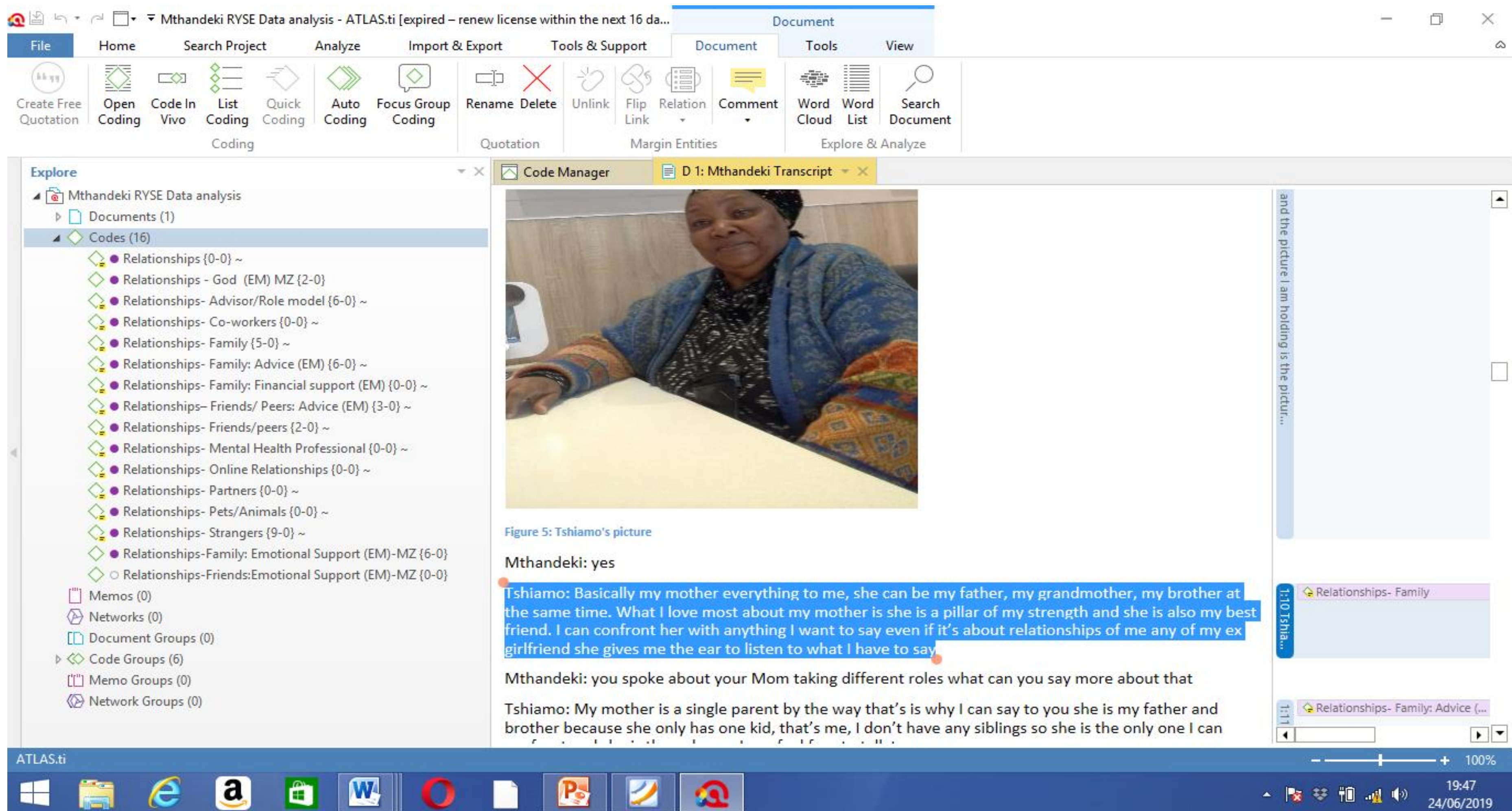


Figure 3. 4: Screenshot from ATLAS.ti illustrating Relationships – Family Code

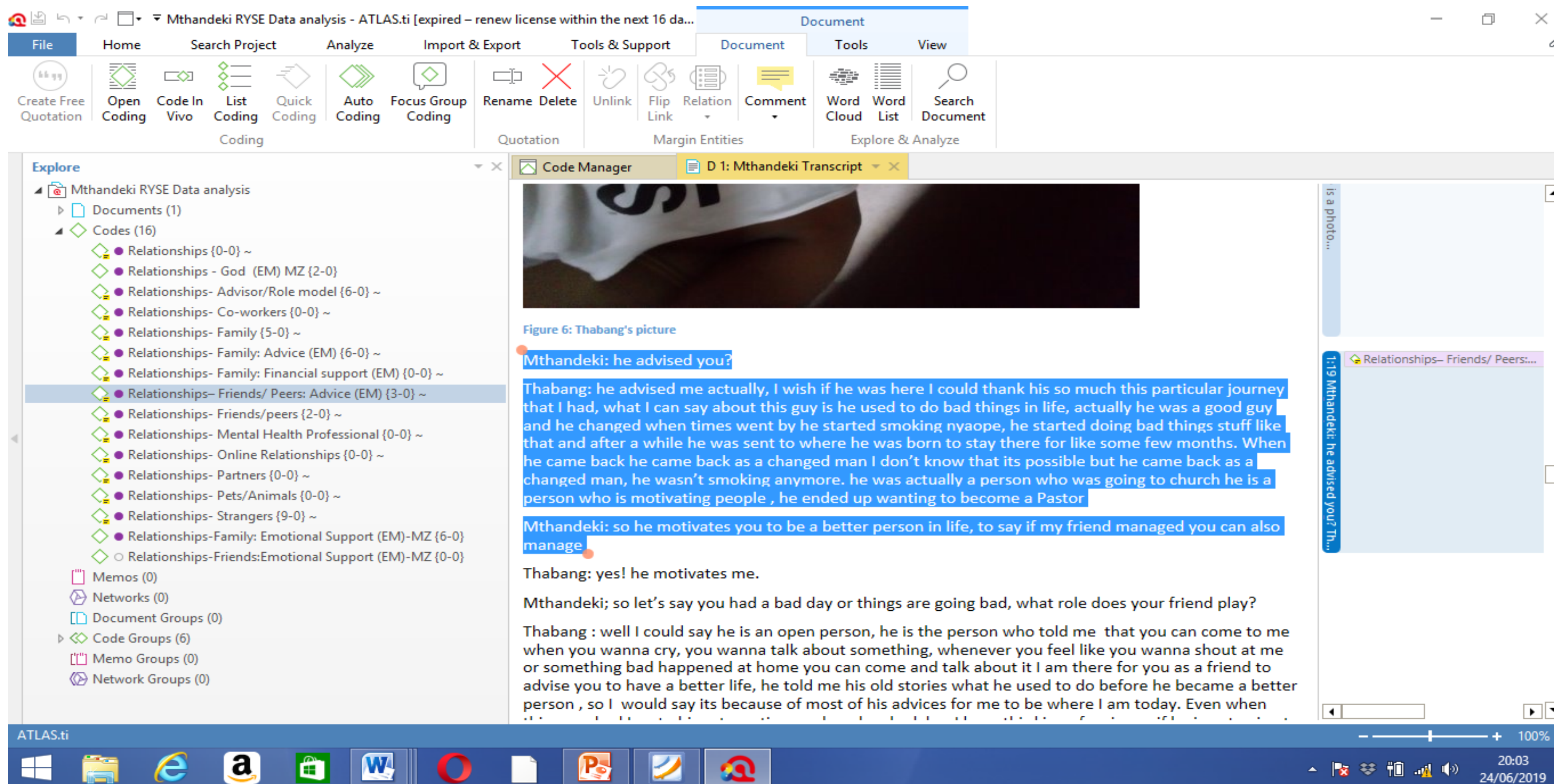


Figure 3. 5: Screenshot from ATLAS.ti illustrating Relationships – Friends/Peers: Advice Relational Code

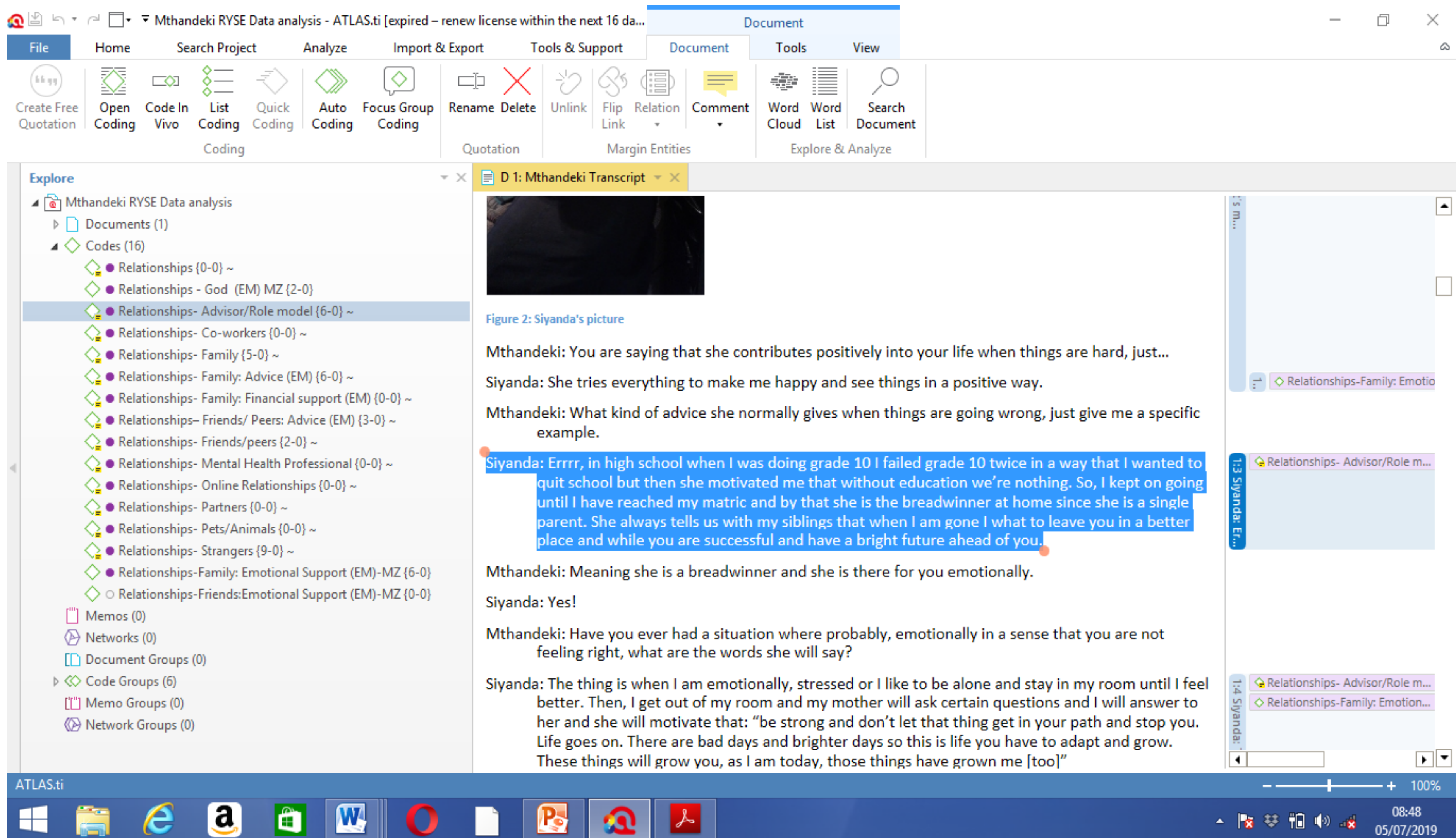


Figure 3. 6: Screenshot from ATLAS.ti illustrating relationships – Advisor/Role Model relational code

While immersing myself in my data and in the relationship codes in the RYSE codebook, I realised that this codebook did not allow me to code all my data. There were no codes for a (1) Relationship with God, (2) Family: Emotional Support, or (3) Friends: Emotional Support. For this reason, I had to inductively generate these three codes as they were represented in my data. This was done so that I would not run the risk of omitting anything when reporting the relationships that enable the resilience process of older adolescents from the eMbalenhle community context. I included the three codes in the codebook and described them (see Addendum 3: Audit trail) by adding the abbreviation (EM) MZ which stands for (eMbalenhle) Mthandeki Zhange. Thereafter, I linked these three codes to the relevant content of my transcript. The 'relationship with strangers' code did not adequately present what was in my research data, therefore I had to enhance this pre-existing relational code by adding the (EM) MZ abbreviation to the code description (see Addendum 3: Audit trail). I added that this code also includes skills or competencies that an adolescent learned from or was taught by resourceful persons in the community. This included advice or information that an adolescent received from random people in the community, such as businesspeople or people possessing certain business or career skills.

Step 3: Verify the codes

This stage entails verifying that there was no misinterpretation of ideas that could lead to incorrect viewpoints in my coding of the data. To do this, I repeatedly worked through my research data as well as the descriptions of different codes in the codebook to verify that none of the data had been coded incorrectly. I corrected the way I linked my research data with different codes in the codebook after looking closely and repeatedly at the descriptions of the codes in the RYSE study codebook. I made necessary corrections upon further engagement with the data. Most of the corrections that I made were in the category of *Relationships – Advisor/Role model*. For example, I made sure that when the word 'motivate' was used to describe how a family member supported adolescent resilience, I used the *Relationships – Advisor/Role model* code and not *Relationships – Family: Advice* (as per the wording in the description of the code).

Step 4: Structure thematic categories and develop visual representations of categories

My research focused on a single category since I only worked with relationship codes. Within this category, however, I came up with four themes as explained next. I sorted five codes ((1) *Relationships – Family*; (2) *Relationships – Family: Advice* (EM); (3) *Relationships – Family: Financial Support* (EM); (4) *Relationships – Family: Emotional Support* (EM)-MZ; (5) *Relationships – Advisor/Role Model*) under a family relationships theme (see Section 4.2). I subsequently identified four codes ((1) *Relationships – Friends/Peers*; (2) *Relationships – Friends: Advice* (EM); (3) *Relationships – Advisor/Role Model*; (4) *Relationships – Friends: Emotional Support*) that constituted a theme named 'relationships with reliable friends' (see Section 4.3). Two further codes, (1) *Relationships – Strangers* and (2) *Relationships – Advisor/Role model,* emerged under a theme called 'relationships with community members' (see Section 4.4). My last theme was 'relationship with God', which consisted of one code (*Relationship with God* (EM)-MZ). Since the *Relationships – Advisor/Role Model* code included family role models and/or community members/peers, this code was included under the family relationships, friend relationships, and community relationships theme. Using the description of this code, I was able to sort it into these three relevant categories of themes.

On 23 May 2018, a meeting was held with my supervisor along with three other master's students involved in the RYSE study. We met at the Centre for the Study of Resilience at the University of Pretoria's Groenkloof Campus. During this meeting, I presented my themes, their associated codes, and rich evidence of each, and my fellow students and supervisor had the opportunity to comment on my coding. They thought that the descriptions of some of the themes did not match their associated codes well enough, because I had omitted some important information in describing my themes. They consequently recommended that I go back and include all other relevant information under the description of a theme to make it more comprehensive. A follow-up presentation was made to the Community Advisory Panel on 12 October 2018 to invite their verification of my themes (see Section 3.6.1, Credibility).

According to Nieuwenhuis (2016, p. 111), developing visual representations of categories entails "tracing the connections between different themes and using diagrams to clarify the relationship between different parts of what makes up the whole data". To help with this, I used a visual summary of the themes (see Figure 4.1) that I deduced from my data. In addition, I looked at the RYSE relationship codes I had not used, and grouped four codes that did not match my data (*Relationships – Mental Health Professionals*; *Relationships – Online*

Relationships; *Relationships – Partners*; *Relationships – Strangers*) under "silences in my data". I gave a report on these silences (see Section 4.5) and included them in my visual summary.

Step 5: Interpret the data

According to Nieuwenhuis (2016, p. 111), "the data must be brought into context with the existing theory to reveal how it is in line with existing knowledge or bring new understanding to the body of knowledge". This can be done by searching for arrangements, associations and explanations that will come up because of comparing research data with the codebook definitions and the existing literature. Chapter 4 of this mini-dissertation contains a detailed report on how my research data links with the existing resilience studies.

Step 6: Draw a conclusion and summarise findings

I documented the conclusion – based on my data analysis and SERT– in Chapter 5.

3.6 QUALITY CRITERIA

To ensure that my research would meet the standards of rigorous qualitative research, I looked at the credibility, transferability, dependability, conformability and the authenticity of my research.

3.6.1 Credibility

Credibility involves establishing that the results of the research are believable. To establish the credibility of the research results, the researcher employs various techniques. An example of this is member checking, where participants confirm or challenge that the researcher has made a correct interpretation of the participants' original views (Morse, 2015). The credibility of the research data can also be tested by means of group discussions with stakeholder groups (e.g. the Community Advisory Panel). To ensure that the results of my research were credible, we did member checking on 12 October 2018. On this date, I, three other RYSE researchers doing a Master's degree in Educational Psychology, and our supervisor, met with the RYSE Community Advisory Panel at the University of Pretoria's library in the research commons.

Figure 3. 7: Member checking meeting (Mthandeki Zhange, Prof. Linda Theron and two Community Advisory Panel members)

Photo provided by Annalize Brynard (UP Head of Marketing and Communication)

During this meeting, we presented our research findings to the Community Advisory Panel, which consisted of six young people (three males and three females). One of the major changes the advisory panel suggested concerned one of my themes, namely *Relationships with Friends*. They suggested that I change it to *Relationships with Reliable Friends* (see Section 4.3), as they believed that, in their context, not all relationships with friends promoted resilience. They spoke about peers who sometimes gave wrong advice and about those who simply did not care about the well-being of their friends. Hence, they proposed that I should rather use *Relationships with Reliable Friends* as a theme. They also added meaningful information relating to their own lived experiences of relationships and accepted my other research findings.

3.6.2 Transferability

Transferability refers to the degree to which the results of the research can be transferred to other contexts or participants. To do this, the researcher needs to provide a detailed description of the participants and of the context in which the study took place (Bryman, 2001; Terre Blanche et al., 2006). In my study, I provided a thorough description of my participants in this chapter (see Table 3.1) displaying the name, age, ethnic group and other background information of each of them. Regarding the context, the aim of my research was to explore the lived experiences and relationships that supported the resilience of older adolescents living in a petrochemical-affected community. This context is specific, given the challenges that my study participants faced regarding township residence and the social, psychological as well as

physical risks posed by their proximity to a petrochemical industry site. I initially explained these challenges in Chapter 2 (see 2.2.4) and added more detail earlier in this chapter (see Section 3.5.2).

3.6.3 Dependability

Dependability is concerned with whether the same results will be obtained if the study is repeated (Babbie & Mouton, 2001) and requires a researcher to provide comprehensive details of all the methods used in the research process to reach the outcomes that are reported (Strydom, 2011). I have outlined the details of the research methods in this chapter to ensure that my research meets the dependability criteria. I also provided details of the data analysis process (i.e. transcripts, audit trail consisting of an excerpt from Atlas.ti, (see Section 3.3.4) to show where I applied the codes, as well as an excerpt from Atlas.ti to show how I used the code families from the codebook (see Section 3.3.4)

3.6.4 Confirmability

Confirmability is about other researchers being able to confirm the results of the research. This process proves that the researcher's interpretations of research findings are not figments of their imagination, but that all the findings are derived from the data (Anney, 2014). To ensure this, I included an audit trail to document the research analysis process and show how I analysed the data (Cope, 2014). I also declare my assumptions (see 1.7) so others could gauge if my assumptions swayed the findings I reported.

3.6.5 Authenticity

Authenticity refers to whether or not the research results are genuine and represent the essence of the idea well. This means that the researcher should provide an adequate representation of the participants' views when attempting to answer the research question (Mertens, 2010). Eight participants participated in my study. I tried to immerse myself deeply in the insights of my participants to get an accurate view of their narrative accounts. Furthermore, I continuously self-reflected so as not to voice my own views rather than those of my participants in the data analysis process. In Chapter 4, I tried to include the voices of all 8 participants.

3.7 ETHICAL CONSIDERATIONS

As already mentioned, my study is part of the Resilient Youth in Stressed Environments (RYSE) project. Ethical approval was obtained from the Ethics Committee of the Faculty of Education at the University of Pretoria (UP 17/05/01). I applied for and received ethical

approval as a co-researcher on the project (see Addendum 1) based on the specific research question that I submitted, and I then signed a declaration of responsibility.

Since my interviews were held in a group setting, I could not guarantee the confidentiality of my research. I informed the participants of this risk and obtained their permission to continue. However, I urged the participants to treat all the interview activities and the responses of other participants as confidential (Bryman, 2001). Consent forms (see Addendum 2: Blank copy of consent form) were filled in by participants with the assistance of the Community Advisory Panel (CAP) prior to the interview. In the consent forms, it was explained that because participants had agreed to be interviewed in a group, other people would know that they participated and what they said. To try and minimise outsiders' knowing what was said, all participants agreed to adhere to certain group rules (e.g. treating one another respectfully, and not talking to others about what specific participants said/did).

During the interview, I ensured that no emotional or psychological harm was done to my participants by either asking them sensitive questions or compelling them to take part in any activity when collecting the data (Bryman, 2001; Kvale, 2008; Terre Blanche et al., 2006). I asked permission from my participants to use their photos for research purposes and also asked them to request permission from whoever appears in the photos that they will take (Ray & Smith, 2012). I further assured them that their photos would be used only for RYSE research.

3.8 CONCLUSION

This chapter justified the research design and methodology I used for my study and explained the ethical requirements that I adhered to during my research. In the following chapter, I will report on the research findings that resulted from my using deductive data analysis and a priori codes from the RYSE codebook.

CHAPTER 4

DATA ANALYSIS

4.1 Introduction

In reply to the question: "Which relationships do older adolescents living in eMbalenhle identify as resilience-enabling and what about these relationships is resilience enabling?", four themes emerged (as summarised in Figure 4.1).

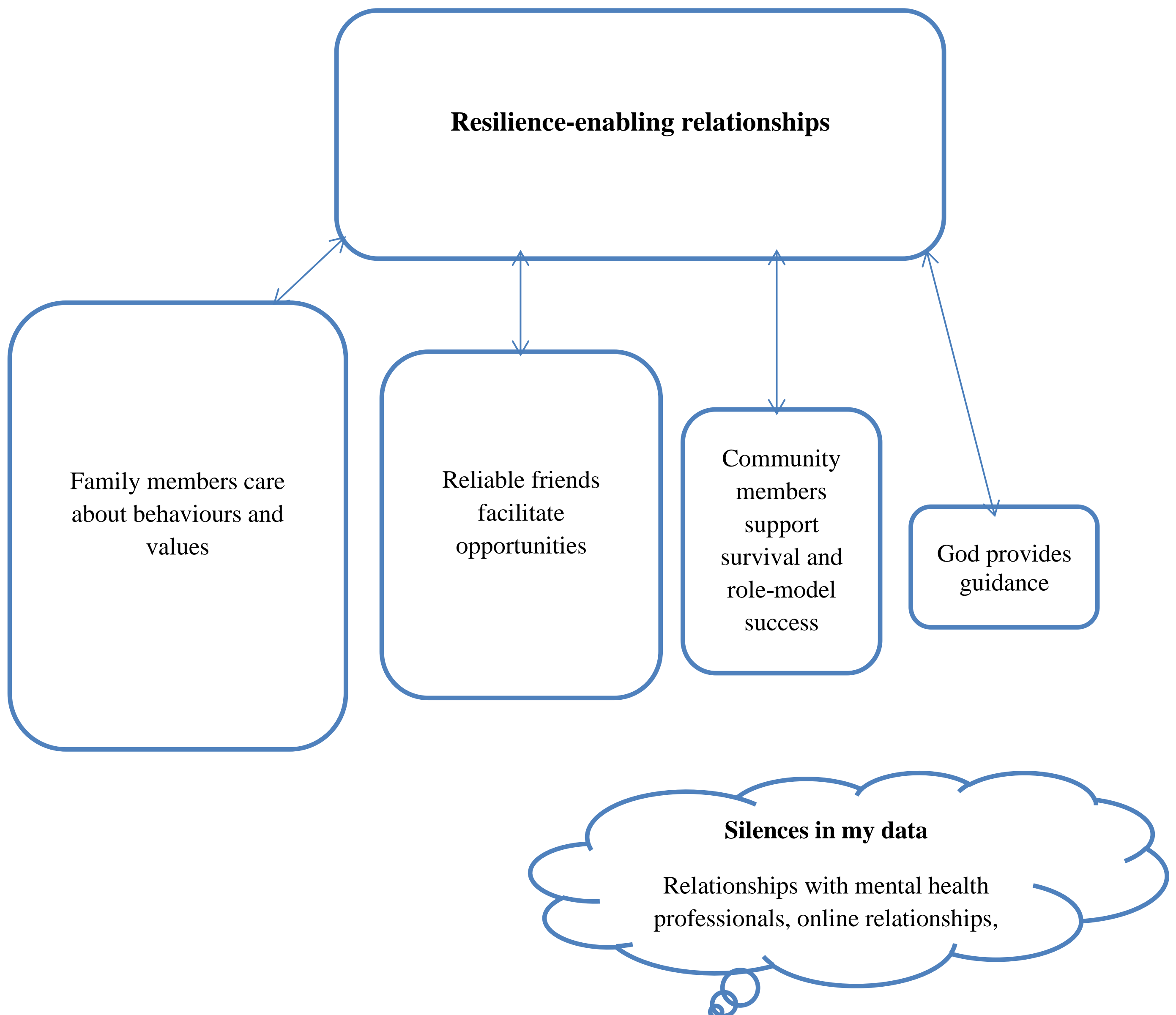


Figure 4.1: A visual summary of the study's findings

My research data points mostly to relationships that older adolescents tend to form with immediate family members, reliable friends, and/or the community. Participants mainly

reported relationships with people. Only one of my eight participants reported a relationship with God. In my explanation of each theme, I will report how these relationships facilitated resilience.

4.2 Theme 1: Family members care about behaviors and values

Family relationships refer to connections with immediate or nuclear family and/or extended family (Theron & Theron, 2013). Five of my eight participants reported family relationships as supporting their resilience. These include any form of support from family, such as advice, motivation and emotional support (Raniga & Mthembu, 2016). The participants reported that receiving advice as well as emotional support from the immediate and extended family facilitated their optimal functioning in the face of adversity/challenges/risks (i.e. helped them manage their behaviour and follow constructive values).

Examples of risks or challenges are losing parents at an early age, unemployment, and health-threatening pollution coming from the industry, some of which were mentioned by participants explaining the relationships that were resilience-enabling. For example, Tshiamo said[1]:

'Crime and air pollution – that's the major crisis we are having in Secunda. Pollution affects us a lot: many of our peers and small children get sick from air pollution and soil pollution. We need to put a stop to it. Even Sasol iyooo!'...

Another participant, Pule, said, *'There is a lot of unemployment in our community'*, while Thabang said, *'I wish there could be a way on how to stop this drug dealing going on ... around our communities, crime, and the major crisis, which is pollution.'*

Participants reported that advice and emotional support (mostly from mothers, grandmothers, and from a grandfather) helped them deal with the aforementioned hardships. For example, Siyanda reported that his mother's advice had shaped his school-related behaviour and values:

'In high school when I was doing grade 10, I failed grade 10 twice in a way that I wanted to quit school, but then [Mother] *motivated me that without education we're nothing. So, I kept on going until I have reached my matric and by that, she is the breadwinner at home since she is a single parent. She always tells us with my siblings when I am gone I* [want] *to leave you in a better place and while you are successful and have a bright future ahead of you'.*

[1] All quotes are presented verbatim as expressed by the participants in my study.

Likewise, Tshiamo appreciated his mother's advice because it enabled him to think about the consequences of having unprotected sexual intercourse. He shared the following regarding a specific incident that happened at home:

'…when she caught me with a girl at home, she sat me down, and she talks to me about unprotected sex and the outcomes of having a baby without any finance coming in; that's where I started realising that she played the role of a father.'

He further remarked that his mother (see Figure 2) was *'a single parent. By the way that's why I can say to you she is my father and brother because she only has one kid, that's me, I don't have any siblings so she is the only one I can confront and she is the only one I can feel free to talk to.'*

Tshiamo further stated that his mother often tended to take on different parenting roles, depending on his needs or the situation at hand. For example, *'she once said to me I will provide you with anything you want and I can be your Father just like what I told you once before, even if you feel like I don't play the role of a father to you, you can go to your Uncle or your Grandfather so they can give you the advice'.* Her statement shows that she was not alone in the upbringing of Tshiamo and that she encouraged him to seek advice from other family members as well.

Figure 4.2: Tshiamo's mother

My participants reported that they showed respect for all people, and that this value was instilled in them through parental guidance or advice and role-modelling. For example, Nhlanhla reported as follows on the guidance he received from his grandmother: *'Most of the time she says I must respect elders and small children.'*

Thuso stood out from the other participants in my study because he was the only one who spoke of the role his father played. Thuso lived with his father, who was a single parent. He told us that his resilience was shaped by his father, who offered him emotional support and understood how young men behaved. He said:

'My father, because he is the only parent, he is the only one that understands me, he is the only one I can speak to freely and open because he was once at my age and he understands how things are ... he understands'.

4.2.1 Using the literature to make meaning of the theme reported in 4.2

Supportive family relationships and how they encouraged resilience-enabling behaviour and values to a large extent fits in with the South African resilience literature. As in the studies by Bhana et al. (2016), Cluver et al. (2015), Raniga and Mthembu (2016), Theron (2017), Theron and Malindi (2013), and Van Breda (2017a), my study reveals that family relationships in this community are resource-enabling sources of advice and support to adolescents. However, none of these South African resilience studies mentioned how families protect township adolescents from risks that are typically associated with the petrochemical industry, such as health risks, psychosocial risks and poverty (Fløttum et al., 2016; Grönqvist et al., 2014; Kruize et al., 2014).

As reported in my study, advice that was received from family members ranged from investment in education to advice on sexual behaviour. I was not surprised that advice regarding education emerged as a theme, because I received similar advice from my mother. In South Africa – and particularly in black communities – education is believed to be one of the leading resilience enablers (Ebersöhn, 2017; Theron, Theron & Malindi, 2013). Black communities regard education as protection against adversity such as poverty, because education facilitates hope for positive future outcomes (e.g. good employment and financial stability) (Spaull, 2015; Smit, Wood & Neethling, 2015).

Encouraging positive social norms and cultural values have been reported by several resilience studies (Madhavan & Crowell, 2014; Mosavel et al., 2015; Theron, 2017). Often, family members in these studies modelled or taught values like respect for elders, norms of successful educational achievement, and culturally salient values such as Ubuntu, and values of interdependence. Similarly, my research findings pointed to parental encouragement regarding investment in education, respecting elders and the emphasis on reaching out to other family members when adolescents need help. Theron et al. (2013) highlight the fact that resilient youth are value-driven, show respect to all, uphold cultural principles and moral values, and embrace

standards such as a sense of communal self. My participants' parents seemed to be comfortable with explaining the reasons for the advice they gave to participants. For example, Siyanda's mother explained that when she was gone, she would want to leave him in better, more successful circumstances in which he had a bright future ahead of him. I believe explanations such as these made my participants value the advice they received from their parents, because these reasons related to the moral values of their particular family and their community at large.

My study revealed that adolescents in this societal context benefit mostly from the support they receive from their mothers and grandmothers as family members who support and enable their resilience process. This finding is consistent with the South African census of 2011 and the 2016 Community Survey, which indicated that 41% of all households in South Africa are headed by women (Hall & Mokomane, 2018). It also corresponds with previous South African resilience studies that found that female relatives generally play a significant role in the resilience of adolescents (Madhavan & Crowell, 2014; Theron & Theron, 2013).

According to the National Plan of Action for Children (2013), only one in three children in South Africa live with both their biological parents. One of my participants mentioned his father – a single parent – as the family member who supports his resilience. Theron (2017) states that the adolescents who live in households where there is a father tend to credit either parents or their father for emotional and instrumental support – which in turn enables them to be resilient.

The resilience literature by Theron (2016) and Munford and Sanders (2015) mentions that financial support that adolescents receive from their family members may support their resilience. The fact that participants in my study did not mention financial support from family members may result from the fact that adolescents in eMbalenhle live with unemployed parents who depend mainly on social grants and therefore do not have the funds to sustain their families. Unemployment is one of the prevailing problems in South African townships (Erten, Leight & Tregenna, 2019). In the Govan Mbeki district, where the eMbalenhle township is located, the unemployment rate is 26.2% (Statistics SA, 2011).

In contrast to other South Africa resilience studies (e.g. Johnson & Quan-Baffour, 2015), my study participants did not mention ancestral family members as supporting factors of their resilience. I believe that this could be due to the acculturation process, which is a process of changing norms, values, beliefs and attitudes (that were once common to a group) due to continuous contact with members from other cultures (Adams & Van De Vijver, 2017). The

acculturation process is very likely to occur in a diverse and multicultural country such as South Africa (Ferguson & Adams, 2016; Mothoa-Frendo, 2017).

While the resilience literature (Bhana et al. 2016; Diab et al., 2015; Theron & Theron, 2013; Sharer, Cluver, Shields & Ahearn, 2016) refers to siblings supporting the resilience of their adolescent brothers and sisters, this did not emerge in my study.

4.3 Theme 2: Reliable friends facilitate opportunities

A reliable friend is a friend who provides opportunities for well-being by supporting, encouraging and comforting. This relationship includes a consistent component of advising, guiding and telling (Espinoza et al., 2014; Turner & Madill, 2016; Flynn et al., 2017). In a friendship, people experience opportunities of belonging, acceptance and positive peer pressure that help them develop in constructive and community-respected ways and adopt high moral values and standards (Madhavan & Crowell, 2014). The support that adolescents receive from friendships leads to happiness or an improved emotional status (Skovdal & Ogutu, 2012).

Three of my eight participants reported positive friendships that enabled them to cope with the adversity of being orphaned or being unemployed. These friendships provided opportunities to belong, receive advice, be comforted or have a chance to make a living. For example, Thabang said, *'[a friend] made me to be a strong person, when I lost my parents'*. He added: *'I lost both of my parents when I was still very young.'* Thabang further remarked: *'He* [see Figure 3] *is an open person, he is the person who told me that you can come to me when you* [want to] *cry, you* [want to] *talk about something, whenever you feel like you* [want to] *shout at me, or something bad happened at home, you can come and talk about it. I am there for you as a friend to advise you to have a better life. He told me his old stories* [about] *what he used to do before he became a better person, so I would say it's because of most of his advice* [that I am] *where I am today. Even when things go bad I go to him at any time and say, hey look bra I have this kind of an issue. If he is not going to help then he will ask his father for advice, he has actually made me become a strong person I... grew up in a tough situation'.*

Figure 4.3: Thabang's friend

According to Thabang, his friend often says: *'I am there for you as a friend to advise you to have a better life.'* Furthermore, Thabang added that *'there was this other time when things were bad in the family when I couldn't speak to anybody or get an advice from any kind of family member, so I decided to go to [the friend] cause I needed someone to hear me out.'*

Reliable friends enhanced resilience when they offered opportunities for emotional support, role modelling, and a reference to ethical standards. For example, Tshiamo mentioned the support he received from a friend, and said: *'He is older than me, so I get many opportunities to experience what older people think and* [why] *they act… yeah... he is basically my brother from another mother because I can talk to him whenever I am in pain if I am good happy or sad and he also has something to say at the right time, which will make me feel good about myself.'*

One of the other participants in my study, Pule, who seemed to love music and producing songs, said that *'there is a lot of unemployment in our community'.* He also shared that one friend enabled his craft by making opportunities available to him: *'Steve* (his friend) *is a local producer. What Steve does, is that he give people opportunity to record their artwork to better their craft. So by doing that, he is bettering the community because he is giving creating people to have a platform to for them to have a voice. By that, he inspires me a lot to what to do more ….. yeah.'*

Pule also talked about one of his friends from the musical crew who provided guidance and advice. As a result, this person served as an ethical template to him: '*I gain in lot of things because he shares his experiences, in that I learn to be the person that I am; he can tell me that drugs are wrong and you will get into trouble if you sell drugs. Actually I have stopped doing that.'*

4.3.1 Making meaning of the theme reported in 4.3

To a large extent 'Reliable friends facilitate opportunities' fits with the South African resilience literature by Kheswa and Shwempe (2016), Madhavan and Crowell (2014), Malindi and Machenjedze (2012), and Theron (2016). These studies reveal that friendships provide opportunities for emotional support, advice, and serve as ethical templates (i.e. give moral guidance) to adolescents. These friendships enable participants to express their emotions freely and be validated, which in turn promotes adjustment in adversity.

According to Theron and Theron (2010, p. 4), "[p]eers were reported as resilience-promoting in a number of studies, primarily because they afforded opportunities for social acceptance and the development of positive identity and values and because youth could talk to their peers about troubling matters and trust them to help out with any problems they may be facing". My findings fit in with the aforementioned statement. My findings contain themes of a deeper kind of emotional support and encouragement.

The provision of emotional support mentioned in my study is similar to that of a study conducted by Collishaw et al. (2016) regarding children orphaned due to HIV in the KwaZulu-Natal province of South Africa. Their study suggested that the children's adjustment is predicted by friendships that offer opportunities for encouragement and emotional support. This helps adolescents cope with the psychological threats of bereavement and impoverished living conditions. My study adds to the understanding of how friendships take away the burden of feeling alone. This could act as a protective barrier against depression as reported in the present study by Van Harmelen et al. (2016). Similarly, a study conducted by Graber et al. (2016), which involved marginalised British adolescents, reveals that supportive friendships (which mainly offer encouragement) can facilitate psychological resilience in vulnerable adolescents.

Opportunities to learn from prosocial friends promotes the positive adaptation of adolescents despite potential risk factors, like alcohol and drug abuse, that are associated with township context (Cain et al., 2013; Pritchett et al., 2013). Advice from friends was also reported in other

resilience studies (Collishaw et al., 2016; Graber et al., 2016; Malindi & Machenjedze, 2012; Skovdal & Ogutu, 2012). A study conducted by Espinoza et al. (2014) states that friendships are characterised by advice that enables adolescents to achieve academically and to demonstrate adaptive behaviour. Reliable friends also provide constructive peer pressure that guides adolescents to adopt community values and culturally relevant practices (Madhavan & Crowell, 2014; Theron, 2017; Theron et al., 2013).

However, the advice that friends provided in my study was not related to issues surrounding academic and school-related matters (like providing others with academic information or providing support to cope with the emotional difficulties that may arise at school, college or university). The findings of my study are therefore not consistent with the study conducted by Espinoza et al. (2014), which involved male and female Mexican high school students in an academic context. This inconsistency may be related to the context in which my study was conducted. Although my participants were either of school-going or higher-education age, only one of them spoke about the academic-related support he received from friends to enhance his resilience. The other seven participants were not attending school or tertiary institutions, which could be why academic support from friends was not prominent in my study. This lack of engagement regarding education is surprising, as several studies conducted in South Africa, such as that of Ebersöhn (2017) and Mosavel et al. (2015), reveal that education is highly valued in most South African communities. It could be that adolescents in the particular context of my study did not particularly value education. This could be because the industrial setting of eMbalenhle perhaps propels some adolescents to reject schooling in the hope of working in the industry, as reported by Goldenberg et al.'s (2010) Canadian study.

A resilience study conducted in Kenya by Skovdal and Ogutu (2012) revealed that orphans and vulnerable youth deal with their circumstances by helping each other with income generation, material support, and food. The findings of the Kenyan study are not entirely applicable to my study as none of my participants mentioned that they receive food from their peers. There were instances where my study suggested that friendships provided opportunities which could have resulted in a form of financial support, like Pule and his music producer friend. This example, however, was not saturated enough for me to conclude that adolescents in this context benefit materially from their peers. Possible reasons for why my participants did not mention financial support from their peers may be that most of my participants receive support from other significant relationships with family and community members.

4.4 Theme 3: Community members support survival and role-model success

Relationships with community members refers to the community members who care enough about adolescents to support their survival by helping them earn a living, learn new skills, and progress in life. Community members also tend to share relevant information like where to find employment. Additionally, community members were seen as role models who inspired hope. Only two of my eight research participants reported community members who supported their survival and role-modelled success.

Sibusiso explained that he felt supported by local business people and that one in particular, a community member who owns a barbershop, *'gives* [Sibusiso] *some money, maybe to buy food* since [he was] *living* with [his] *grandpa'*. This comment reveals the hardship he experienced due to being raised by a single, elderly grandparent. The owner of the barber shop, by sharing his knowledge and barber skills with Sibusiso, helped alleviate some of Sibusiso's struggle. In the barbershop, Sibusiso had the opportunity to connect with other community members who could also give him advice about employment opportunities.

Sibusiso's relationship with the barber was characterised by instrumental support and skills development – the barber taught him skills and competencies that enabled Sibusiso to make a living and adapt positively to his circumstances. Sibusiso explained: *'When I am busy cutting some people* [cutting their hair], *there are people coming from Sasol* [a petrochemical industry plant near the eMbalenhle community]. *I can ask them about the job what-what. I can be able to communicate with people there at the barbershop'*. Sibusiso also found other ways to learn from the owner of the barbershop. He explained: *'During this time the barber teaches me to 'know how to use a blade, so he also introduced me to cut some styles.'*

Another member of the community, a car wash owner, allowed Sibusiso to spend time at his car wash and, when there was enough business, allowed him to wash some of the cars. Sibisuso's two photos (Figures 4.4 and 4.5) show the business owners' businesses where he says he feels welcome. Being at the car wash and barbershop helped Sibusiso generate an income which kept him from having to '*go to bed with an empty stomach*'. Sibusiso added: *'eventually where I go, I found help, I got a learnership for the municipality'*. It was the owner of the car wash who encouraged him to apply for the opportunity at the municipality.

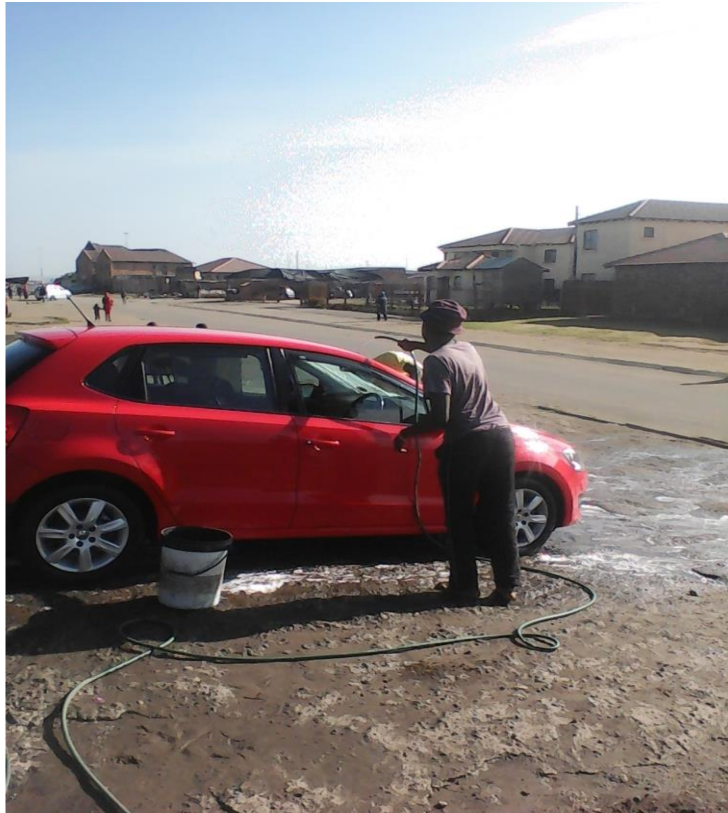


Figure 4.4: Sibusiso at the car wash

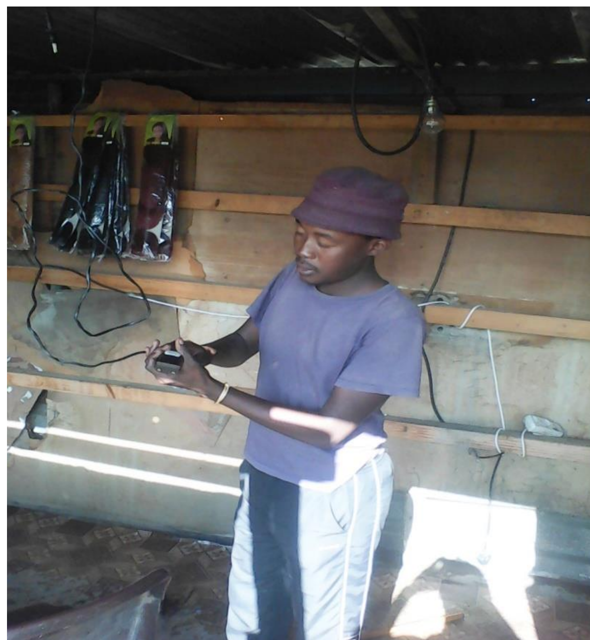


Figure 4.5: Sibusiso at the barbershop

The only other participant who reported a relationship with community members was Thuso. He gave an account of a local businessman, which suggested that he saw this businessman as

a role model. Thuso explained: *'Bab is a businessman. He grew up eating pap and atchar. It was well known that he is the poorest guy. He strived until now he is a successful businessman…. it gives me hope that opportunities are not restricted out there; I might be lucky one day and get one, so I mustn't just give up ……. , people who grow up in a similar childhood like me and managed to make it later………if I strive even hard maybe I will get an opportunity, when I get that opportunity I must use it wisely.'*

Thuso seemed to relate to the success that Bab had achieved on a deeper level. Bab's successes generated hope in Thuso. Bab seemed to serve as an inspiration to Thuso and helped him make meaning of the adversity that Thuso was facing.

4.4.1 Making meaning of the theme reported in 4.4

The theme of community members who supported survival and role-modelled success is not fully consistent with the South African resilience literature (Malindi & Machenjedze, 2012; Theron, 2013; Theron, 2016). Local caring adults usually play a vital role in influencing adolescents' behaviours and aligning them with the shared cultural norms and values of the community (Theron, 2013; Theron & Phasha, 2015). According to previous resilience studies (Mosavel et al., 2015; Neal, 2017), at a community level the resilience of older adolescents is also fostered by local caring adults who stand as a collective against adversity. In a South African context – particularly when explaining the resilience phenomenon at a community level – there is a greater emphasis on the values that are associated with Ubuntu, like group solidarity and collectivity (Theron, 2013). However, this was not prominent in my study as only two of my participants mentioned that they benefited from two specific, individual community members, not the community as a collective.

The barber and the car wash owner played an important role in sharing valuable information with Sibusiso. They gave financial support, provided skills development, and mentored Sibusiso, who then navigated to the sociocultural resources that were available in his community context. I believe that this resonates with a well-known Sesotho idiom which reads '*moketa ho tsoswa oe tekang*'. This means that a person only receives help from others if they possess some sense of agency or is trying to make something meaningful out of their life. That being said, only one of my eight participants reported that a community member (i.e. the barber and car wash owners) instrumentally supported resilience. This single mention does not provide adequate evidence to conclude that Ubuntu, which is typified by collectivism, communalism or instrumental support in other resilience studies (Johnson & Quan-Baffour, 2015; Theron &

Theron, 2010), is still alive in eMbalenhle. Some studies suggest that *ubuntu* is in danger of extinction (Gumbo, 2014; Matolino & Kwindingwi, 2013). These studies propose three different reasons for this: the South African government is greedy and corrupt; adolescents disregard their elders or view them as illiterate and ignorant; communities are moving away from collectivism to individualism, which places greater value on the freedom of the individual and a disregard for others as fellow humans.

Adolescents looking to and forming relationships with local role models is consistent with the results of other resilience studies (Fazel & Betancourt, 2018; Madhavan & Crowell, 2014; Schelbe & Geiger, 2017). Successful local adults can serve as role models for adolescents, as they instil hope and strength in these young people in the face of adversity. According to Madhavan and Crowell (2014), South African adolescents tend to view specific people as role models, and these are primarily: people with money, fame or talent; people who have achieved in politics, athletics, music or education; preachers and persons who have attained entrepreneurial success. Again, because only one participant mentioned a community member who role-modelled success, I could not be sure that adolescents in the eMbalenhle community actually benefited from role models in the community. The low mention of role models could be because five of my eight participants seemed to benefit significantly from family relationships instead. Only two of my participants mentioned that adults from the local community played a role in their resilience.

The findings of my study did not point to any emotional or affective support received by adolescents from community members. This is incongruent with the American resilience studies by Neal (2017) and Wexler et al. (2016). Both studies reveal that adolescents received emotional support from local caring adults, which in turn enabled them to become resilient despite a background of adversity. My study did not report any emotional support from local caring adults, which could indicate that ubuntu is in danger of extinction due to the social ills found in many communities in South Africa (Gumbo, 2014; Matolino & Kwindingwi, 2013).

4.5 Theme 4: God provides guidance

I expected participants to report relationships with spiritual beings as supportive of their resilience, as reported in other studies (Ebersöhn, 2017; Theron & Theron, 2013). However, only one of my eight research participants reported a resilience-enabling relationship with God. Siyanda mentioned God when he talked about the support he had received from his mother: *'I*

highly value it because in this area that we are living in we are exposed to material things (e.g drugs) and those material things damage us. But, with her on my side and God they guide me to right way not to be exposed to those material things'. He further explained: *'You know, when you are sad or things aren't going the way as we expect them, I just close my eyes and pray. After that, I feel better and I will think of a way to go forward, and by that things just turn out the way I expect them to be; it just happens that they are no longer that bad.'* In other words, when Siyanda communicated with God, he experienced comfort and a sense of direction. It is interesting to note that while Siyanda was explaining his relationship with God, the other participants kept quiet even after I probed further and did not attempt to report any relationship they might have with a spiritual being.

4.6 Silences in my data

The pre-existing relationship codes in the RYSE codebook included relationships with mental health professionals, online relationships, relationships with pets and animals, and relationships with co-workers. My participants did not refer to any of these relationships.

Regarding the relationships with co-workers, I concluded that the silence in my data was because seven out of eight of my participants were unemployed at the time that they participated in my research. Unemployment is a significant problem in South Africa and the issue of limited job opportunities is the main contributor to poverty in communities (Erten et al., 2019). Recent statistics show that youths aged 15 to 24 years (which is the age category that applies to my research participants) make up the most vulnerable group in the South African labour market, as the unemployment rate in this age group was 55,2% in the first quarter of 2019 (Statistics SA, 2019).

Regarding online relationships, relationships with pets and animals, and relationships with mental health professionals, I assumed that my participants did not have the financial resources required for these relationships. For example, one needs to be able to purchase data and have access to electronic devices to build an online relationship. Similarly, feeding pets also costs money. I believe my participants' restricted finances originated from the fact that most (seven out of eight) of my participants were unemployed and lived in resource-constrained households. Relationships with mental health professionals could be prohibited by the expenses involved with therapy – especially in a resource-constrained community such as eMbalenhle. Additionally, the provision of public services in South Africa, including mental health services, is limited (Mokitimi, Schneider & de Vries, 2018).

The available literature includes accounts of resilience-enabling relationships that adolescents have with service providers such as teachers, nurses, social workers, psychologists, and other professionals in governmental and non-governmental facilities such as schools, shelters, correctional services and clinics (Crush & Tawodzera, 2014; Clements-Nolle & Waddington, 2019). However, none of my participants mentioned any of these relationships. Because none of them were at school when they were interviewed, they did not speak about teachers. As far as relationships with other service providers (such as psychologists, mental health workers and social workers) are concerned, these relationships were probably not reported on due to the insufficient nature of psychological and social services, or, as mentioned earlier, because my participants seemed well-supported by their families.

My study participants did not report religious and community leaders as people who supported adolescent resilience. This could be because they did not play a significant role in the resilience of adolescents. This finding is in clear contrast to some of the literature (Ager et al., 2014; Hope et al., 2017) that I consulted. Participants mentioned neither counselling advice nor dispute resolution to ensure harmony in the community, or the provision of services to help adolescents cope with the adversities that are likely to threaten their well-being (Şimşir et al., 2018). Possible reasons why religious and community leaders did not play a significant role in the lives of adolescents in the eMbalenhle community can be related to the negatives that were associated with some religious leaders elsewhere (like discrimination, providing inaccurate information, and offering false hope) (Derose et al., 2016; Rankin et al., 2016; Wesselmann & Graziano, 2010). Another reason my participants did not report community leaders as resilience enablers could be because the inadequate provision of services in eMbalenhle had led to violent protests organised by these community leaders which may affect how they are viewed by young adults (Mathebula, 2018c).

4.7 CONCLUSION

My research participants reported that their relationships with family, friends, community members and God are resilience-enabling. This is not surprising and corresponds well with the existing resilience studies in South Africa (Ebersöhn, 2017; Madhavan & Crowell, 2014; Theron, 2017; Theron et al., 2013). Van Breda and Theron (2018) also concluded that relationships (including relationships with family, friends, community members and spiritual beings) were a dominant pathway to stimulating resilience in South African children and youth. Lastly, given the context of my study, I was not surprised to find that my participants did not

report relationships with mental health professionals, online friends, pets and animals, or co-workers. In the next and final chapter, I will interpret what my study's context-specific findings might mean for educational psychologists, particularly when considered from the perspective of SERT.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

In this concluding chapter, I consider the relationship between my findings and my research question. I also discuss how my research findings relate to the four principles of the SERT theory. Furthermore, I suggest ideas for future resilience research and ways that educational psychologists can facilitate resilience among older adolescents living in a township affected by risks associated with the petrochemical industry.

5.2 RESEARCH QUESTION REVISITED

The primary research question that directed my study of limited scope was: "Which relationships do older adolescents living in eMbalenhle identify as resilience-enabling, and what about these relationships is resilience-enabling?" I used the Socio-Ecological Resilience Theory (SERT) to frame my study, as this theory considers exposure to risk and adversity as an important factor and starting point in the resilience process (Ungar, 2015). The SERT also describes resilience as a process that involves the ability of an adolescent to seek out resources in the socio-ecology that are relevant to and can meet their needs (Ungar, 2011).

Being exposed to the petrochemical industry and living in a township comes with various physical, economic and psychosocial risks (Cain et al., 2013; Goldenberg et al., 2010; Tomlinson & Minnis, 2013; Makanga et al., 2017). It is clear from what my participants reported that they were facing various risks related to their living context, which included exposure to crime, unemployment, drug dealing, and air/soil pollution caused by the petrochemical industry. Participants reported that these risk factors had a negative impact on them, which made me interested in the relationships that older adolescents have that support their resilience. My focus on relationships was based on a belief that people who are facing significant risks can adapt well to harsh social and psychological threats if they can connect with and receive help from other people (Clements-Nolle & Waddington, 2019; van Rensburg et al., 2018). Ungar (2011) agrees and says that in the contexts of high risks, the social ecology

has a more significant role to play in enabling the resilience of adolescents. Ungar (2015) also explains that change is facilitated through the process by which the environment provides resources for adolescents to use. I believe that the relationships that adolescents have in an environment typified by significant risk factors can serve as a channel to access other socio-ecological resources that will enable these adolescents to thrive despite adversity.

My findings show that family relationships enable resilience as they provide emotional support, advice and motivation that shape resilience-enabling behaviour and values. This is consistent with other South African studies such as those by Bhana et al. (2016), Raniga and Mthembu (2016), Theron (2017), and Theron and Malindi (2013). The theme of family relationships enabling resilience was reported by most of the participants (five out of eight) in my study.

My study found that relationships with reliable friends are resilience-enabling as they facilitate opportunities. These findings are consistent with those of other South African resilience studies (Kheswa & Shwempe, 2016; Madhavan & Crowell, 2014; Malindi & Machenjedze, 2012; Theron, 2016). The important role that reliable friends play in the lives of older adolescents in eMbalenhle led me to conclude that friendships can also be resilience-enabling, especially in the absence of parents and other family members who act as resilience role players. Because my participants were older adolescents, it would have been developmentally appropriate for relationships with friends to be more prominent (Louw & Louw, 2014).

The participants in my study did not report resilience-enabling relationships with community members in a way that is consistent with the ideals of Ubuntu. This is shown by the fact that only two participants reported relationships with individual community members. This implies that group solidarity at a community level was not evident in the results of my study, as opposed to what had been found in the resilience studies by Marston (2015) and Theron and Phasha (2015). However, I was not surprised as some studies (Gumbo, 2014; Matolino & Kwindingwi, 2013) suggest that the spirit of Ubuntu is in danger of dying in many communities due to the acculturation process (Ferguson & Adams, 2016), due to poverty or due to a shortage of resources in most communities in South Africa (Erten et al., 2019). I believe that a shortage of resources and high poverty levels lead people to keep their resources to themselves instead of sharing (which might imply that they won't have enough to meet their own needs) (Mabovula, 2011). As a result, people in the community become unwilling to share any information or resources with others.

Most of my assumptions (see Chapter 1, Section 1.7) regarding the relationships that facilitate adolescents' resilience (and how these relationships manage to do so) were proven to be accurate. The only exception was related to a relationship with spiritual beings (i.e. God or

ancestors), which was reported by only one participant. This implies that even though resilience is a process that depends on the socio-cultural context in which this process takes place (Ungar, 2015), adolescents need to personally embrace socio-cultural values (e.g. being religious) for such values to shape their resilience.

My study did not credit ancestral relationships as resilience-enabling. This is contrary to some resilience studies (Nguyen et al., 2015; Rahmati et al., 2017; Thabede, 2014), which credit a relationship with God and ancestors as being valued in some of the traditionally African community contexts in South Africa. Acknowledging diversity is critical, as there may exist subcultures with different norms and practices within a specific culture. A community is not a static entity waiting to be discovered; it experiences constant transformation, which is influenced by current political, cultural and economic changes and advancements (Tebes, 2016). This means that researchers cannot make absolute assumptions about the community as the focus of one's research, or the socio-cultural values that adolescents in that community embrace.

Figure 5.1 gives a summary of my relationship-focused themes and shows how they relate to the four principles of the SERT framework.

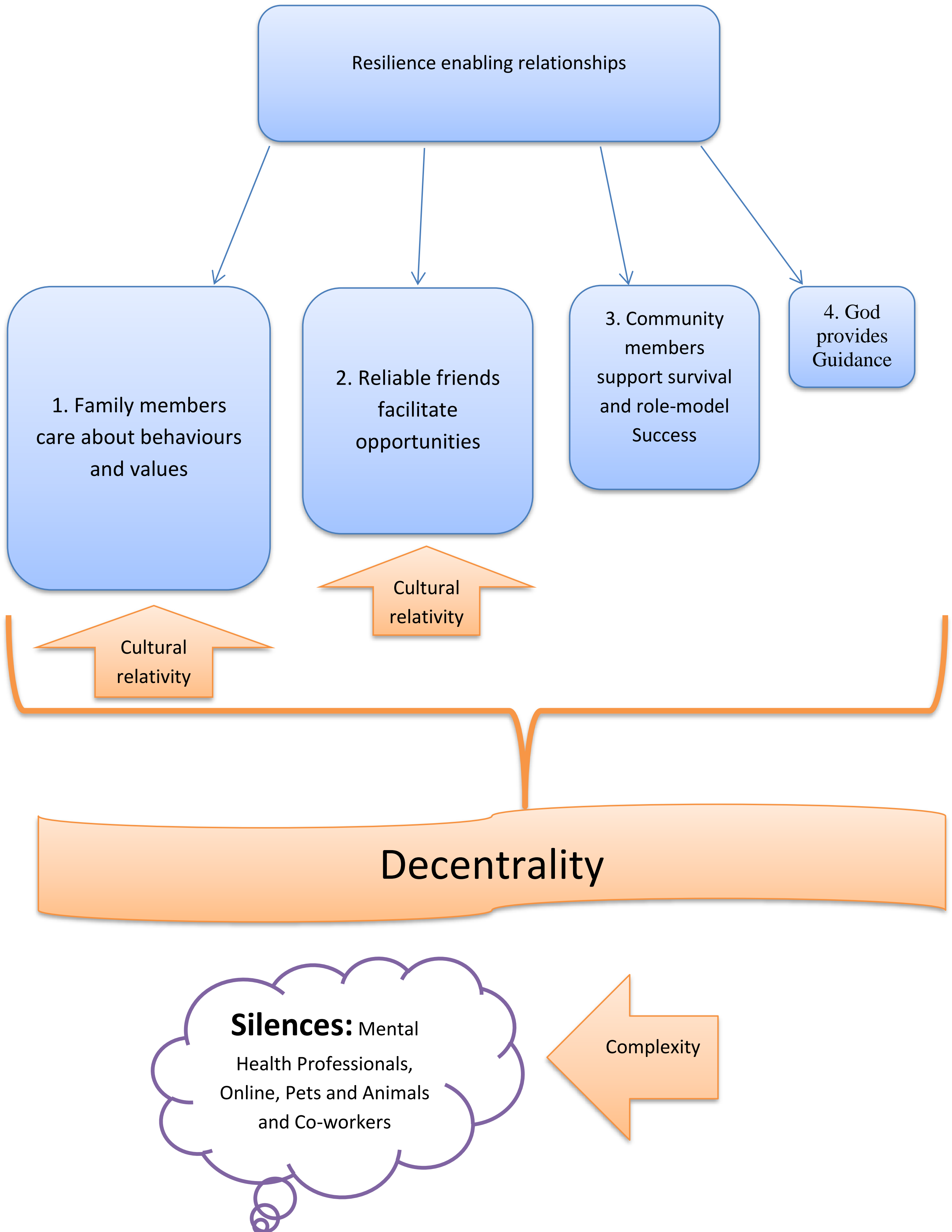


Figure 5. 1: Summary of findings relating to the SERT framework

Decentrality is a principle in the SERT framework that illustrates that change within an individual happens through interaction between that individual and the environment (Ungar, 2011; Ungar, 2015). In my study, I accepted the principle of decentrality and went on to explore which relationships (a resource that is not centred on the individual) are resilience-enabling and how they support resilience for a group of adolescents from eMbalenhle. For this reason, I only comment on what my findings mean from the perspective of the other SERT principles (i.e. complexity, atypicality and cultural relativity).

According to the complexity principle explained in Chapter 1, resilience looks different in different contexts due to factors such as gender, race and culture (Ebersöhn, 2017; Ungar, 2011). This principle was represented in the silences of my data. Although included in the RYSE codebook, my data was silent about relationships with mental health professionals, online relationships, relationships with pets and animals, and relationships with co-workers. As explained in Chapter 4, Section 4.6, it is probable that socio-economic constraints influenced my participants' non-reporting of these relationships.

Complexity was also reflected in the results of my research on the resilience of older adolescents in eMbalenhle. These adolescents were not strongly informed by community member relationships, as opposed to other communities both in South Africa and internationally (Malindi & Machenjedze, 2012; Mosavel et al., 2015; Neal, 2017; Theron, 2013; Theron, 2016). My research did not indicate any relationship with community-based service providers such as teachers, nurses, social workers or other helping professionals, as opposed to the South African resilience literature by Malindi and Machenjedze (2012), Mampane (2016) and Van Breda (2017). From my knowledge, based on interactions I had with the CAP and from my observations the day I collected my data, I gathered that most of the social services in this community are dysfunctional. Again, this suggests that context realities complicate predictions of which relationships will support adolescent resilience in a specific context.

All the differences mentioned in the discussion above (relating to the complexity of the resilience of older adolescents in the eMbalenhle community) suggest that the pathway to their resilience is different from that of other communities, both in South Africa and internationally. The complexities, based on the information of eight male participants and confirmed by the eMbalenhle community advisory panel, serve as a starting point to understand the relationships that enable adolescents' resilience in the context of the eMbalenhle community. However,

because resilience is complex, it is impossible to make absolute generalisations. One cannot make assumptions that these results will apply to all the adolescents living in a township that is affected by the petrochemical industry.

Atypicality is one of the principles of the SERT theory that was not represented in my research. None of my participants reported relationships that were inconsistent with culturally valued principles or community norms (Ungar, 2011). The way my participants benefited from resilience-facilitating relationships imitated the typical ways in which adolescents make use of or navigate to relationships that are in their socio-ecology. I believe that my participants did not report anything atypical because they are deeply rooted in the locally accepted cultural norms, values and belief systems, such as respecting and valuing parental advice, and drawing support from family, friends and members of the community.

According to the principle of cultural relativity, resilience is shaped by culture. Culture, as a way of life, includes the norms and standards of everyday living (Ungar, 2011). My participants were more inclined to report resilience-enabling relationships with family members than with anyone else. I believe this reflects the traditional African values of respecting family and appreciating the advice and lessons received from elders in the family (Theron & Theron, 2013). These findings are consistent with those of other South African resilience studies with young African people (Madhavan & Crowell, 2014; Theron, 2017). These studies argue that a supportive family of origin mainly promotes the resilience of South African black adolescents. My participants reported supportive relationships with mostly female family role players, as well as from extended family members (e.g. grandparents). This is consistent with the South African community context where fathers are often absent from home due to work or other obligations, while mothers and grandparents take on parenting and co-parenting roles (Dunham & Flores-Yeffal, 2019). My findings are also consistent with the traditional African practice of extended family members – especially female relatives – being involved in childrearing (Mkhize, 2006). According to the available literature, an African family in a South African context traditionally includes members of the immediate family as well as extended family members (Johnson & Quan-Baffour, 2015; Theron & Theron, 2013).

By looking closely at the cultural relativity principle and the findings of my study, I had the impression that adolescents in this community rely heavily on relationships with people they are in touch with in their everyday lives. They rely on family or friends to enhance their resilience, rather than on relationships with professionals (i.e. clinic nurses, social workers) or

on online relationships. As a black person myself, I believe this can also be a cultural norm to depend on people who are a part of your everyday life, rather than on professional acquaintances. African culture values relationships with the people who form part of one's everyday existence (Theron et al., 2013). Although my research question restricted my participants' responses to report only on relationships, none of them minimised relationships (e.g. giving reference to themselves) or said they had no relationships to report – which can also be seen as culturally relative An African culture values interdependence and argues that the individual is less important than the community (Mkhize, 2006).

5.3 REFLEXIVITY

Reflexivity is defined as the process of thoughtful awareness in which the researcher engages with several factors that may have played a role in the outcome of the study (e.g. race, sex, ethnic group, values, age and previous experience). The process of reflexivity occurs by means of continued internal dialogue (Berger, 2015; Enosh & Ben-Ari, 2015). Reflexivity helps increase the integrity and trustworthiness of the research by letting the researcher critically evaluate the processes followed in the collection, selection and interpretation of research data. It also looks at the influence the researcher had on the people or the topic studied (Enosh & Ben-Ari, 2015). In this section, I share a few of the issues that I reflected on because they could have shaped my research.

On my arrival at eMbalenhle, I noticed burnt tyres on the road and a closed mall due to the previous protests and strike (Mathebula, 2018c). I immediately felt a burning sensation on my skin and developed a sinus headache due to the pollution in this area. This experience on arrival made me realise that the risks in this area pose a significant threat to both the physical and mental health, and to the economic circumstances of participants in this area. When I met my participants, I already had the perception that they are facing significant adversity because of this context. I have never borne witness to a violent protest in my community and only learnt about these incidents in the news. I have also not been exposed to the drastic air pollution that my participants were facing, nor to the combined negative impact of violence and pollution. My experience on arrival in this community made me realise that while I shared some similarities with my participants, there were also significant differences between us.

The similarities I had with my participants are that we are all black males who came from a disadvantaged background. However, we differed in that they were fluent in isiZulu and some were orphans, while I was not. I believe that when my participants saw the similarities between

us, they became more welcoming and were able to connect with me. Again, as a researcher and a postgraduate student, I had to be willing to learn from my participants. My personal experiences and the way I construct meaning out of these experiences set me apart from my participants. Therefore, I believed it vital to tell my participants that I, as an outsider from Parys, Free State, was interested in their own experiences regarding the relationships that account for their resilience. Realising my position as an outsider made me value the socio-constructivist methodology even more. I could acknowledge that I was researching a context-bound phenomenon of which I needed to gain as much information subjectively as my participants were willing to narrate from their perspective (Becvar & Becvar, 2014; Burr, 2015).

Finding that a relationship with God was reported by only one participant and that my participants did not credit religious leaders as per my assumptions in Chapter 1, came as a total surprise. I had anticipated that more adolescents would report this theme as contributing to their resilience. However, this made me realise that people should be viewed as individuals, without being generalised. I come from a Christian family where a relationship with God is seen as one of the core resilience-enablers. I also believe in the principles of Ubuntu, such as group solidarity and collectivism (Mkhize, 2006). It is difficult to accept that the spirit of Ubuntu in this community is not flourishing and that it has actually been reported in some literature to be dying (Gumbo, 2014). Finally,, I reflected that my data was an assurance that South Africa is truly a diverse country that consists of different cultures and belief systems. I realised that culture is not static, but rather subject to constant transformation (Adams & Van De Vijver, 2017). People who come from the same race or socio-cultural background do not necessarily share the same culture or belief systems. As a researcher and future educational psychologist, this was an urgent call to me to re-evaluate my assumptions. Furthermore, I realised that I need to apply theoretical knowledge in a more meaningful and responsible way to fit each unique individual client.

5.4 LIMITATIONS OF THIS STUDY

Reflecting on my study helped me identify specific limitations. These limitations include the following:

- My study was part of a bigger (RYSE) project as explained in Chapter 1. This limited my selection of a site for the execution of this project. South Africa has other semi-rural

townships, such as Sasolburg in the Free State province, which are also affected by the petrochemical industry. It would have been useful to extend the current study to other sites that are also affected by the petrochemical industry.

- The purposive sampling method used in this study did not include gender as one of the criteria for sampling. As a result, I ended up interviewing only eight male participants for this study. Although the community advisory panel, which consisted of males and females, confirmed the results of my study, as a researcher I believe it would be beneficial to purposefully invite female participants to take part in this study. Eight participants is a fairly small sample, even though 2-10 participants are typical for phenomenological studies (Groeneweld, 2004). It is possible that my less prominently reported themes (e.g. community members that support survival and role model success) could have been more prominent if I had more participants.
- Another limitation was caused by the data collection technique I used in my study. Some of the participants did not bring in photos with them and I tried to improvise by using pictures from magazines (Kafle, 2011). I believe it would have been better if all my participants had brought photos on that day.

5.5 RECOMMENDATIONS

5.5.1 Recommendations relating to future research

This study or a similar resilience study should be repeated in other townships in South Africa that is affected by the petrochemical industry, such as in Zamdela in Sasolburg, located at Fezile Dabi District of the Free State province. I believe that this will provide alternative insights and advance the body of knowledge on the resilience of adolescents living in South African communities affected by typical township and petrochemical industry risks. Additionally, by conducting this research again, attempts can be made to further explore the role of ancestors, community and religious leaders as resilience-enabling and further explore the role of relationships with mental health professionals, online relationships, relationships with pets and animals, and relationships with co-workers for older South African adolescents living in resource-constrained communities.

The current study should be conducted again with a mixed gender sample. A study consisting of individuals who identify as males cannot be made applicable to all older adolescents (aged 18-24 years) who are living in a township affected by a petrochemical industry. It would also be useful to increase the sample size. The period of data collection should be extended from

one day to two days, to afford participants an opportunity to collect photos if they failed to bring photos on the first day of the interviews.

5.5.2 Recommendations for educational psychologists

Educational psychologists should primarily focus on socio-ecology (different social support systems) when working with clients who are exposed to various risk factors. It is important for these professionals to continuously plan contextually relevant intervention activities and to know that each adolescent is different. This suggests that what works for one participant, will not necessarily work for another. Educational psychologists need to understand the risk factors and protective resources that each participant can relate to (Ebersöhn, 2017). As in the resilience literature by Clements-Nolle and Waddington (2019), Ungar (2011) and van Rensburg et al. (2018), young people who face risks rely more on their socio-ecology for protective resources. Building resilience should be a process where psychologists raise awareness in clients about the potential social support systems such as relationships and different ways in which clients can benefit from these available systems.

Educational psychologists should furthermore focus on building relationships that support the resilience of adolescents who are living in a community context like eMbalenhle. Based on my research findings, educational psychologists should consider planning a programme that will facilitate family resilience as well as strengthen the interpersonal relations among friends. Such support needs to be complemented by extensive research in communities affected by the petrochemical industry. The findings of the proposed research will provide educational psychologists with the insights needed to plan a holistic intervention programme for adolescents living in communities affected by risk factors caused by the petrochemical industry in typical township residences.

Based on my research, I realised that using photo elicitation with a group can be valuable to identify the risks factors facing clients and different resilience pathways. I strongly advise educational psychologists to use photo elicitation in group and individual therapy, as it serves as a tool that enables clients to express their feelings and thoughts freely and deeply. As a future educational psychologist, I place great value on the socio-constructivist and phenomenological stance that I took on understanding the relationships that account for the resilience of older adolescents in this township. I suggest that psychologists be greatly sensitive to the culture and lived experiences of clients when they collect background information from them, and to understand that clients' experiences could be shaped by their culture and context. To relate fully and build rapport with one's clients as an educational psychologist, it is necessary to

understand and relate to clients' experiences from their contextual perspective (Benuto, Casas & O'Donohue, 2018; Chang & Singh, 2016; Sue, Sue, Neville, & Smith, 2019).

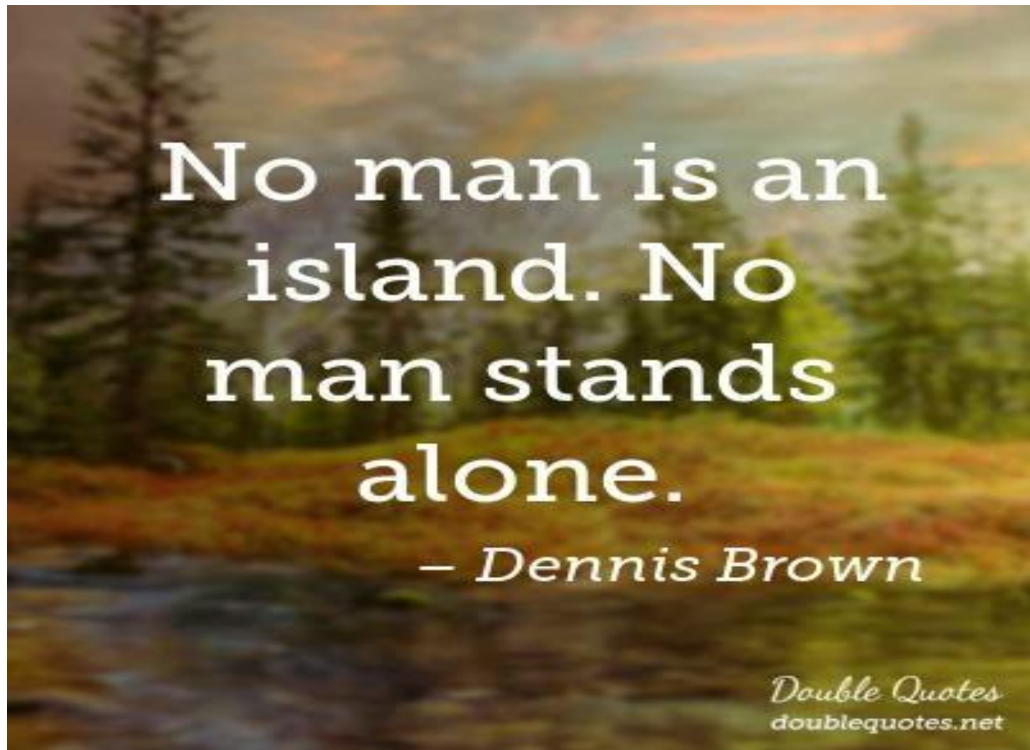
Finally, educational psychologists may consider mobilising the socio-ecological resources in a specific community and linking adolescents to available learnership opportunities (even informal opportunities like the barber mentioned in my study). Building programmes on existing socio-ecological strengths and preventing problems are important when working in a community that is greatly affected by various risks factors (Jimerson, Sharkey, Nyborg, & Furlong, 2004). To successfully build these programmes, it is important to understand the context and lived experiences of the clients in a particular community. This argument fits in with educational psychologists being mandated by their scope of practice to plan intervention programmes at a community level (Corcoran, 2014; HPCSA, 2017).

5.6 CONCLUSION

My study explored the relationships that older adolescents living in eMbalenhle identified as resilience-enabling and the ways in which these relationships were resilience-enabling. I found that family, friends and, to a more limited extent, community members and God were relevant to the resilience process of older adolescents living in the eMbalenhle community. These relationships supported resilience by encouraging resilience-enabling behaviour and values, providing opportunities, supporting survival, modelling success and giving guidance. My findings are important because they remind us of the complexity and cultural relativity of resilience in a township that is affected by the petrochemical industry. They provide educational psychologists with a baseline knowledge of the resilience-enabling relationships of older adolescents living in such a township. This means that the results of my research could aid educational psychologists to tailoring an intervention that will be responsive to the needs of adolescent clients living either in eMbalenhle or in a community like eMbalenhle (Pillay, 2014).

In conclusion, the resilience of older adolescents in a township affected by the petrochemical industry is facilitated by meaningful relationships that help them manage the harsh effects of adversities associated with their environment. John Donne said that, "No man is an island, entire of itself; every man is a piece of the continent, a part of the main" (*Devotions,* 1624). This resonates deeply with the African philosophy of Ubuntu, which explains personhood as relational (Marston, 2015). As an individual, one cannot manage life all by oneself, but must

rather belong to a group of people who will work to ease the burden of the different adversities life may bring.



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ADDENDUM

Addendum 1: Ethics Clearance Certificate

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Faculty of Education

Ethics Committee

11 April 2018

Mr Mthandeki Zhange

Dear Mr Zhange

REFERENCE: UP 17/05/01 Theron 18-003

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

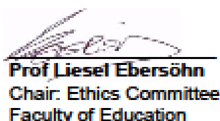
The Ethics Committee of the Faculty of Education does not accept any liability for research misconduct, of whatsoever nature, committed by the researcher(s) in the implementation of the approved protocol.

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 17/05/01 Theron 18-003** in any communication with the Ethics Committee.

Best wishes



Prof Liesel Ebersöhn
Chair: Ethics Committee
Faculty of Education

Addendum 2: Blank Consent Form

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Faculty of Education

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.

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?

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

- 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: ____________ Time: ____________	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: – 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 video-activity 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**

Addendum 3: Audit trail

A. The relational codes and definitions of the codebook

Relationships	Any reference to the role of personal relationships – positive and negative – in the life of an individual or in the context of the community; Descriptions of feelings that opinions are valued, feeling respected, being able to open up or share perspectives freely
Relationships – God (EM) MZ	Any reference to a relationship with God
Relationships – Friends: Advice (EM)	Any reference to friends advising/guiding/telling what should be done
Relationships-Advisor/Role model	Any relationships with teachers and coaches/mentors in and out of school EM: Also family role models and/or community members/peers who model success/adjustment or motivate/mentor the participant
Relationships – Co-workers	Relationships with co-workers and 'bosses'
Relationships – Family	Any relationships with immediate and extended family and discussions of family dynamics Also support from family (double code as support as well
Relationships – Family: Advice (EM)	Any reference to advice/guidance from family
Relationships – Family: Emotional support (EM) MZ	Includes a family member's ability to show empathy and genuine concern; listening to, offering encouraging words and validation of feelings.
Relationships – Family: Financial support (EM)	Any reference to family being able to provide for basic needs because family members are employed and/or young person reciprocating where possible
Relationships – Friends/ Peers	Any positive and negative aspects of relationships with friends, peer pressure A friend's ability to show empathy and genuine concern; involves listening to, offering encouraging words and validation of feelings

Relationships- – Friends: Emotional Support (EM)MZ	
Relationships – Mental Health Professionals	With school counsellors, psychiatrists, doctors, nurses
Relationships – Online Relationships	Any references to friends/ relationships online, as well as to social media relationships – including cyber-bullying
Relationships – Partners	Any references to romantic partners – boyfriend/girlfriend/spouse/common-law partner)
Relationships – Pets/Animals	Any references to relationships with pets or other animals
Relationships – Strangers (EM) MZ	Any reference to meeting and connecting with new friends, random encounters or acquaintances within the community (EM) MZ also includes: skills or competencies that one has learned or been taught by community resourceful persons such as business people or people possessing a certain skill in either a business or a career. Any advice or information that one can get from random people in the community

[i] An undeveloped urban residential area that was reserved for non-whites (Africans, people of mixed-race origin and Indians) in terms of the apartheid government legislation (Hamann, 2015; Kovacic & Giampietro, 2017).