RESILIENCE IN FAMILIES LIVING WITH A TYPE I DIABETIC CHILD

Mariska Coetzee

Submitted in partial fulfilment of the requirements for the degree of

MAGISTER ARTIUM IN CLINICAL PSYCHOLOGY

in the

Department of Psychology
in the
Faculty of Health Sciences at the
Nelson Mandela Metropolitan University

Supervisor: Ms Ottilia Brown-Baatjies
Co-Supervisor: Dr Paul Fouché

May 2007
Acknowledgements

There are so many people that I would like to express my gratitude to:

- God, who knows and holds my heart and knows the path in life I must take.

- My own resilient family with a Type I diabetic child. Dankie Mamma en Pappa dat julle my ondersteun het en my toegelaat het om ‘n normale lewe te lei as kind. Aan my suster, Anja, dankie vir al jou voorstelle oor die rol van die sib in ‘n diabetiese kind se lewe! Alhoewel ek dit nie kon byvoeg nie, weet jy werkelik waaroor dit alles gaan.

- My research supervisors, Ottilia and Paul. Thank you for your invaluable advice and patience with my writing. Ottilia, thank you for your enthusiasm and your big red arrows on drafts of chapters. More importantly, thank you for understanding that life happens while conducting research. Paul, thank you for your prompt feedback and playing devil’s advocate!

- The Family Support Groups. I would like to express my gratitude towards Deidré Gerber and Shelly Appel, and Kathy Johnson for their kind assistance. Thank you for motivating families to complete their questionnaires and giving me a greater understanding of the role of the mother of a Type I diabetic child.

- Thank you to the State Hospital for their prompt feedback regarding my request to sample research participants at their facility. Thank you to the medical team of this hospital that introduced me to possible research participants. Your dedication to patients’ well-being is admirable.

- The research participants. Thank you for your participation in this study. Thank you for your time and allowing me as a researcher to contribute to a greater understanding of how resilient these families can be, despite the challenges that families living with a Type I diabetic child have to face.
• Prof Awie Greeff, at the University of Stellenbosch for his allocation of SANPAD funding for family resilience research at the Nelson Mandela Metropolitan University.

• Dr Martin Kidd, at the University of Stellenbosch for analysing the data for this study.

• Dr Annemarie Barnard, for her assistance with the interpretation of the statistics.

• My friends, thank you for your love and support.

• My cat, Ounooi. Thank you for keeping me company perched on top of the computer.
TABLE OF CONTENTS

Acknowledgements ii
List of Figures x
List of Tables xi
Abstract xii

Chapter One: Introduction and Problem Statement

1.1 Introduction 1
1.2 Context of the Research 1
   1.2.1 Families Living with Diabetes 1
   1.2.2 Positive Psychology and Resilience 3
1.3 Primary Aim of the Research 6
1.4 Delineation of Chapters 6
1.5 Conclusion 7

Chapter Two: Resilience

2.1 Introduction 8
2.2 Resilience as a Construct 8
   2.2.1 Individual Resilience 9
   2.2.2 Family Resilience 11
   2.2.2.1 General Resilience Factors 13
2.3 Research Review 15
   2.3.1 Individual Resilience 15
Chapter Three: Diabetes Mellitus

3.1 Introduction

3.2 Defining Diabetes Mellitus

3.2.1 Type I Diabetes

3.2.2 Type II Diabetes

3.3 The Challenges of Living with Type I Diabetes

3.3.1 Complications Associated with Type I Diabetes

3.3.2 The Management of Type I Diabetes

3.3.3 Psychosocial Challenges

3.3.3.1 The Child Living with Type I Diabetes

3.3.3.1.1 Developmental Tasks

3.3.3.1.2 Emotions of a Child Living with Type I Diabetes

3.3.3.2 Challenges Faced by the Diabetic Child’s Family
| 3.3.3.2.1 | Coping with the Diagnosis | 46 |
| 3.3.3.2.2 | Long-term Effects of Type I Diabetes on Family Life | 47 |
| 3.3.3.2.3 | Siblings | 49 |
| 3.3.3.3 | The School Environment | 50 |
| 3.3.3.4 | Relatives and Friends | 50 |
| 3.3.3.5 | Health Care Professionals | 51 |
| 3.4 | Coping with Challenges Related to Type I Diabetes | 52 |
| 3.4.1 | Parental Mutuality | 52 |
| 3.4.2 | Additional Family Protective Factors | 53 |
| 3.4.3 | Building an Instrumental Support System | 53 |
| 3.4.4 | Spirituality and Religion | 55 |
| 3.4.4.1 | Providing an Interpretive Framework or Cognitive Schema | 55 |
| 3.4.4.2 | Enhancing Personal Coping Resources | 56 |
| 3.4.4.3 | Social Support and Social Integration | 56 |
| 3.5 | Conclusion | 57 |

**Chapter Four: Research Design and Methodology**

| 4.1 | Introduction | 58 |
| 4.2 | Aim of Study | 58 |
| 4.3 | Research Design and Methodology | 58 |
| 4.3.1 | Exploratory Research | 59 |
| 4.3.2 | Descriptive Research | 60 |
| 4.3.2.1 | Survey Research | 60 |
| 4.3.4 | Participants and Sampling | 62 |
| 4.3.4.1 | Sampling Procedure | 63 |
4.3.4.2 Research Participants

4.3.5 Research Measures

<table>
<thead>
<tr>
<th>4.3.5.1 Biographical Questionnaire</th>
<th>68</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.3.5.2 Relative and Friend Support Index (RFS)</td>
<td>69</td>
</tr>
<tr>
<td>4.3.5.3 Social Support Index (SSI)</td>
<td>69</td>
</tr>
<tr>
<td>4.3.5.4 Family Crisis-Oriented Personal Evaluation Scales (F-COPES)</td>
<td>70</td>
</tr>
<tr>
<td>4.3.5.5 Family Hardiness Index (FHI)</td>
<td>71</td>
</tr>
<tr>
<td>4.3.5.6 Family Time and Routine Index (FTRI)</td>
<td>72</td>
</tr>
<tr>
<td>4.3.5.7 Family Problem-Solving Communication (FPSC)</td>
<td>73</td>
</tr>
<tr>
<td>4.3.5.8 Family Attachment and Changeability Index 8 (FACI8)</td>
<td>74</td>
</tr>
</tbody>
</table>

4.4 Research Procedure

4.5 Data Analysis

| 4.5.1 Quantitative Data | 77 |
| 4.5.2 Qualitative Data | 79 |

4.6 Ethical Considerations

| 4.6.1 Informed Consent and Voluntary Participation | 82 |
| 4.6.2 Privacy and Confidentiality | 82 |
| 4.6.3 Minimising Psychological Risk and Harm | 83 |
| 4.6.4 Dissemination of Results | 83 |

4.7 Conclusion

**Chapter Five: Results and Discussion**

5.1 Introduction

5.2 Results of the Measures

| 5.2.1 Quantitative Analysis | 86 |
5.2.1.1 Correlation Analysis

5.2.1.1.1 Family Hardiness (Family Hardiness Index)

5.2.1.1.2 Family Time and Routines (Family Time and Routine Index)

5.2.1.1.3 Communication (Family Problem-Solving Communication)

5.2.1.2 Summary of the Correlation Results

5.2.2 Regression Analysis

5.3 Qualitative Analysis

5.3.1 Social Support

5.3.2 The Caregivers’ Acceptance of the Condition

5.3.3 Spirituality and Religion (belief, behaviour, and support)

5.3.4 Obtainment of Skills and Knowledge

5.3.5 Supportive Family Unit

5.3.6 The Child’s Acceptance of the Condition

5.3.7 Adherence to Treatment Regimen

5.3.8 Parental Mutuality

5.3.9 Marital Relationship

5.3.10 Communication (Open and Honest Communication)

5.3.11 Financial Resources

5.3.12 Hope

5.3.13 Truthfulness

5.4 Summary of Qualitative Results

5.5 Integrating Qualitative and Quantitative Results

5.6 Conclusion
Chapter Six: Conclusions, Limitations, and Recommendations

6.1 Introduction 107
6.2 Conclusions of the Study 107
6.3 Value of the Research 109
6.4 Limitations of the Study 110
6.5 Recommendations 113
6.6 Conclusion 114

References 115

Appendices

Appendix A: Consent Form
Appendix B: Covering Letter to Participants
Appendix C: Biographical Questionnaire
List of Figures

Figure 1: The Adjustment Phase of the Resiliency Model of Family Stress, Adjustment and Adaptation. 23

Figure 2: The Adaptation Phase of the Resiliency Model of Family Stress, Adjustment and Adaptation. 28
## List of Tables

Table 1: Pearson Product-Moment Correlations between Adaptation (FACI8) and Potential Resilience Variables 88

Table 2: Regression Analysis for Family Adaptation (FACI8) as Dependent Variable versus Potential Resiliency Variables (N = 31) 95

Table 3: Themes that Emerged from the Content Analysis (N=30) 97
Abstract

Type I diabetes has the ability to promote change in the family. In truth, although the child with diabetes is the diagnosed patient, the whole family has diabetes. While the challenges that families have to face are many, families seem to have the ability to “bounce back” (i.e., they have resilience).

Research on the construct of resilience, and more specifically, family resilience has surged in recent times. However, South African research on family resilience is limited. This study aimed to explore and describe the factors that facilitate adjustment and adaptation in families that include a child living with Type I diabetes. The Resiliency Model of Stress, Adjustment and Adaptation, developed by McCubbin and McCubbin (2001) served as a framework to conceptualise the families’ adjustment and adaptation process.

Non-probability purposive and snowball sampling techniques were employed. Sixteen families participated in this study, providing a total of 31 participants. Participants consisted of the caregivers of a family living with a child between the ages of four and 12 with Type I diabetes.

The study was triangular in nature, with an exploratory, descriptive approach. A biographical questionnaire with an open-ended question was used in conjunction with seven other questionnaires to gather data. These questionnaires were: The Family Hardiness Index (FHI), the Family Time and Routine Index (FTRI), the Social Support Index (SSI), the Family Problem-Solving Communication (FPSC) Index, the Family Crises-Oriented Personal Evaluation Scales (F-COPES), the Relative and Friend Support Index, and the Family Attachment and Changeability Index 8 (FACI8).

Descriptive statistics were used to describe the biographical information. Quantitative data were analysed by means of correlation and regression analysis, and a content analysis was conducted to analyse the qualitative data.
The results of the quantitative analysis indicated three significant positive correlations with the FACI8. These variables were family hardiness (measured by the FHI), family problem-solving communication (measured by the FPSC), and family time and routines (measured by the FTRI).

The results of the qualitative analysis revealed that social support, the caregivers’ acceptance of the condition, and spirituality and religion were the most important strength factors that contributed to the families’ adjustment and adaptation. Although the study had a small sample and many limitations, the study could be used as a stepping-stone for future research on resilience in families living with chronic medical conditions and will contribute to family resilience research in the South African context.

**Key concepts:** Type I diabetes, family resilience, Resiliency Model of Family Stress, Adjustment and Adaptation
Chapter One

Introduction and Problem Statement

1.1 Introduction

Chapter One provides an overview of the present research on family resilience and diabetes in the family. The context of the research is described and the motivation for the study is clearly stated. The proposed aim of the study is also set out and is followed by a delineation of the chapters to come.

1.2 Context of the Research

The following section focuses on the context of the research and is divided between literature on families living with diabetes and literature on resilience.

1.2.1 Families Living with Diabetes

McCubbin, McCubbin, Thompson, Han and Allen (1997) alerted us to the stressors and demands that are faced by families in the 21st century. Some of the risk factors that families might face are diverse family forms, together with unique stressors. One of these unique stressors is chronic illness in the family; and more specifically, Type I diabetes (diabetes is defined in Chapter Three), which was the focus of the present study. The impact of a chronic illness can be significant for the diagnosed individual as a chronic illness is degenerative and pervasive in nature (Brannon & Feist, 2000; Caltabiano & Sarafino, 2002).

As parents, we expect our children to be healthy and when a child is diagnosed with a chronic condition, parents grieve for the loss of their child’s health (Lowes, Lyne & Gregory, 2004; Marshall, Fleming, Gillibrand & Carter, 2002; Seppanen, Kyngas & Nikkonen, 1999). While parents are coming to grips with their child’s diagnosis, they also have to adjust and adapt to the crisis that they face as people living with diabetes are at an increased risk of developing
complications (Anderson, Loughlin & Laffel, 2001; DeCoster, 2001; Patterson & Garwick, 1994). These complications include both physical and/or psychosocial complications.

Some of the physical complications that are associated with Type I diabetes are blindness, cardiac disease, end-stage renal failure and non-injury related lower limb amputations (DeCoster, 2001; Lo, 1999; Trief, Sandberg, Greenberg, Kraff, Castranova, Yoon & Weinstock, 2003). To successfully manage the diabetes, family members have to become involved in the treatment regimen, such as insulin injections, the monitoring of blood glucose levels with glucose monitoring systems, the management of meals, and the implementation of exercise programmes (DeCoster, 2001).

The complications of Type I diabetes are not limited to physical complications as there could also be an impact on the psychosocial functioning of the family (Hoare, Mann & Dunn, 2000; Lowes et al., 2004; Marshall et al., 2002; Seppanen et al., 1999; Tsamarli & Kounenou, 2004). Type I diabetes has the unique characteristic of demanding change in the family’s established patterns of functioning, leading to a disruption in normal, taken-for-granted routines of everyday life which in turn leads to changes in the relationships between family members (Anderson et al., 2001; Charron-Prochownik & Kovacs, 2000; Hardey, 1998; Hentinen & Kyngas, 1998; McCubbin & McCubbin, 1988; Patterson, 2002a; Seppanen et al., 1999). These changes could add to a range of challenges that the family has to cope with and could lead to increased stress for the family. The family’s ability to cope with stress is important for the successful management of Type I diabetes as stress has been found to have a negative impact on metabolic control in Type I diabetes and is associated with recurrent rehospitalisations (McDougal, 2002; Tubiana-Rufi, Moret, Czernichow, Chwalow and the PEDIAB Collaborative Group, 1998; White, Kolman, Wexler, Polin & Winter, 1984). In addition to this, the management of diabetes could be further complicated by problems such as depression, eating disorders, stress/anxiety and family conflicts (Snoek & Skinner, 2001). A valuable coping resource that the family could utilise is instrumental and emotional support from outside sources such as health practitioners as well as family and friends. However, Type I diabetes
could have an isolating effect on the family when their extended family and friends do not feel competent enough to take care of the child living with diabetes (Lowes et al., 2004; McDougal, 2002). Although the help of health practitioners is of great value to the family, these resources are time-bound (meaning that the child and the family are exposed to medical service for a limited period of time) and focus more on the medical treatment of the condition than its psychological impact on the diagnosed child as well as the family (Lowes et al., 2004; Shapiro, 2002).

Despite the multitude of challenges that families living with a child with diabetes face and the fact that Type I diabetes tends to have an isolating effect on the family, it seems that they are able to adjust and adapt to such an extent that diabetes is viewed as a manageable condition rather than an illness (Seppanen et al., 1999). Families are able to utilise their strengths and bounce back from adversity (Garmezy & Rutter, 1983; Ryff & Singer, 2003). This ability of the family to bounce back is referred to as resilience, which is a construct that highlights the positive side of human behaviour (Compton, 2005; Garmezy & Rutter, 1983). Adversity refers to negative experiences that have the ability to impair adaptive functioning or development (Yates & Masten, 2004). The construct resilience is one of the key constructs which highlight a paradigm shift in the field of psychology. This paradigm shift is discussed in the following section.

1.2.2 Positive Psychology and Resilience

The focus on the positive side of humanity, such as health and resilience, is a recent trend in psychology. Prior to World War II, professional psychology largely ignored the study of the positive side of human behaviour (Compton, 2005, Keyes & Haidt, 2003). Consequently, psychology became unbalanced with an inappropriately negative view of human nature and the human condition. Another implication was that research in the field of psychology was restricted to pathology and impaired scientific inquiry into more positive fields (Keyes & Haidt, 2003). The early goal of psychology was to cure mental illness; to find and nurture genius and talent and finally to make life more fulfilling. Research on what makes life more fulfilling and meaningful was not a
priority and the question of how people moved from a neutral position to a positive place of increased adaptability, well-being and happiness was neglected (Compton, 2005). However, research is revealing how important positive emotions and adaptive behaviours are to living a satisfying and meaningful life (Compton, 2005). This signified a shift from pathogenesis to salutogenesis.

The latter emphasises strengths and health instead of illness (Antonovsky, 1987; Ganong & Coleman, 2002; Luthar, Cicchetti & Becker, 2000). This change from a deficit-based approach to a strengths-based approach is referred to as ‘Positive Psychology’, a term coined by Martin Seligman in 1998 (Compton, 2005; Seligman, 1998). Seligman urged psychologists to remember the goal of psychology, namely that “psychology is not just the study of weakness and damage, it is also the study of strength and virtue” (Seligman, 1998, p. 2). Treatment encompasses more than just repairing what is broken, it is also about nurturing strengths and the facilitation of optimal functioning (Linley & Joseph, 2004; Seligman, 1998).

A construct that focuses on strengths during adversity is resilience. Scholarly interest in resilience during the late twentieth century sparked further interest in positive psychology as researchers explored, wrote, and spoke about the human capacity for adaptation in the face of adversity (Yates & Masten, 2004).

Resilience has been viewed as a quality that resides within the individual, but some researchers have advocated the importance of resilience as a concept in the family field, viewing the family as challenged rather than damaged (Patterson, 2002b; Walsh, 1996, 2002, 2003). The definition of family resilience highlights the reparative potential of the family in that they may not bounce back unscathed from adversity, but are able to work through and learn from adversity by integrating their crises as a part of the life history of the family (Walsh, 2002). McCubbin and McCubbin (1988) defined family resilience as “characteristics, dimensions and properties of families which help families be resistant to disruption in the face of change and adaptive in the face of crisis situations” (p. 247). A more recent definition by McCubbin et al. (1997) defined family resilience as “the
property of the family system that enables it to maintain its established patterns of functioning after being challenged and confronted by risk factors” (p. 2). These authors also introduced the concept of ‘buoyancy’, referring to the “family’s ability to recover quickly from a misfortune, trauma, or transitional event causing or calling for changes in the family’s pattern of functioning” (p. 2).

A family resilience framework offers advantages such as using a strengths-based approach, rather than focusing on pathology per se. The resilience framework also assumes that no single model is applicable to all families or their situations, and does not stipulate guidelines for an ideal family (Walsh, 2002, 2003). In addition to this, a resilience-orientated view of the family is empowering since the members are all viewed as individuals who are able to thrive despite the challenges they face as a family (Hawley, 2000; Ryff & Singer, 2003; Walsh, 2002). This positive view of the family can be valuable for future crises (Hawley, 2000). The literature suggests that a focus on what makes families strong in the face of adversity could be beneficial to the family (Hawley, 2000; McCubbin, Thompson & McCubbin, 2001; Ryff & Singer, 2003; Walsh, 2002). With a growing body of research on how individuals and families cope with challenges, the resilience framework is a valuable tool in the applied practice of positive psychology (Yates & Masten, 2004).

Research results on what makes the family resilient in the face of adversity could be used to inform intervention programmes and thereby contribute to clinical practice by building bridges between clinicians, researchers and policy makers (Hawley, 2000; Walsh, 2003). Despite the above-mentioned advantages of a family resilience framework, research on family resilience in the South African context is limited (Der Kinderen & Greeff, 2003; Greeff, 2004; Greeff & Aspeling, 2004; Greeff & Human, 2004; Greeff & Ritman, 2005). The present research formed part of resilience research funded by the South Africa Netherlands Research Programme on Alternatives in Development (i.e., SANPAD). These studies investigated the impact of normative and non-normative crises on the family.
Due to the significant impact of chronic illness on the diagnosed individual, the family and friends, it would be beneficial to explore how families adjust and adapt after the diagnosis of Type I diabetes has been made. In addition to this, more people have been affected by chronic illness (such as heart disease and cancer) than acute diseases (such as pneumonia and influenza) in recent times (Brannon & Feist, 2000). Although research has been conducted on the impact of Type I diabetes and how families cope with the stressors (Hentinen & Kyngas, 1998; Lowes et al., 2004; McDougal, 2002; Shapiro, 2002), less research has been done on the process of resilience (McCubbin & McCubbin, 1993).

In light of the afore-mentioned literature, the motivation for the study was twofold, namely, the growing concern about the demise of the family in the face of unique circumstances such as Type I diabetes, and the lack of research on family resilience in the South African context. The results of this study could contribute to a better understanding of the factors that make these families resilient and could be used in intervention programmes to offer families instrumental and emotional support and build and nurture strength factors in the family. A focus on the strengths that reside within families could enhance the process of turning Type I diabetes from a chronic illness into a manageable condition. The primary aim of the research project is described in the section to follow.

1.3 Primary Aim of the Research

The primary aim of the present study is to explore and describe the resilience factors that facilitate adjustment and adaptation in a family with a child that has Type I diabetes.

1.4 Delineation of Chapters

Chapter One provided an introduction to the present study. In this chapter, the context of the research, the motivation for the study and the aim of the study are delineated.
Chapter Two highlights the development of the construct formulation, resilience. In this chapter, the development of both individual and family resilience is presented as well as the conceptual model that was utilised in this study to gain a better understanding of family resilience.

Chapter Three presents an examination of the dynamics related to Type I diabetes, namely what the condition is, the challenges that the diagnosed child and his/her family might face, as well as how they cope with these challenges in an attempt to adjust and adapt.

Chapter Four describes the research design and methodology that were employed in this study. The research design, sampling procedure, the measures that were used, and the data analysis employed are discussed. The ethical considerations that the researcher considered are also highlighted.

Chapter Five provides a discussion of the results obtained from the data analysis. In addition to this, the results are interpreted in terms of the literature presented in Chapters Two and Three.

Chapter Six introduces the conclusions of the study, which are based on the research results. The limitations of the study are discussed, and recommendations for future research in this area are made.

1.5 Conclusion

In this chapter, a brief outline of the current study was provided. The impact of Type I diabetes on the family was mentioned as well as the need for resilience in the family in an attempt to adjust and adapt to the crisis faced. Resilience is a construct that is related to the field of positive psychology and is receiving increased scholarly attention. The motivation for the study was briefly outlined and the aim of the current study was introduced. Chapter One concluded in a delineation of the current research. Chapter Two provides an overview of one of the constructs related to positive psychology, namely resilience.
Chapter 2

Resilience

2.1 Introduction

The current chapter focuses on one of the construct formulations of positive psychology, namely resilience. A brief overview of the historical background of the resilience concept is provided with a specific focus on individual and family resilience. Research on factors that make the individual resilient sparked interest in the system in which the individual functioned, namely the family and the community. Subsequent to this discussion, an overview of research using individual and family resilience as a variable is provided. As work in the area evolved, researchers moved beyond the notion that resilience is a characteristic in the individual that could be influenced by the family, to a family resilience framework that conceptualises resilience as a systemic quality. In terms of the current research project, the Resiliency Model of Family Stress, Adjustment and Adaptation was used as a conceptual framework to explore and describe the adjustment and adaptation of families with a Type I diabetic child. The Resiliency Model of Family Stress, Adjustment and Adaptation is the most recent development in theory building on resilience in the family. Although the process of adaptation was the focus of the present study, the adjustment process will also be described. Finally, the applicability of the Resiliency Model to families with a child living with Type I diabetes is highlighted.

2.2 Resilience as a Construct

A focus on deficiencies rather than the strengths that reside within individuals has been a societal concern for many years. In recent times, a paradigm shift has occurred from pathogenesis to salutogenesis (i.e., a perspective that emphasises strengths and health, instead of illness) [Antonovsky, 1987]. Martin Seligman (1998) defined the change from a deficit-based approach to a strengths-based
approach as ‘positive psychology’. This author stated that “psychology is not just the study of weakness and damage, it is also the study of strength and virtue” (Seligman, 1998, p. 2). In recent times, researchers have questioned how some people are able to stay healthy and do well in the face of risk and adversity while others do not (Patterson, 2002a; Zimmerman & Arunkumar, 1994). One of the reasons for positive adjustment and adaptation in the face of adversity seems to be a phenomenon referred to as resilience. Two types of resilience are discussed, namely individual resilience and family resilience.

2.2.1 Individual Resilience

Resilience can be broadly defined as the ability to spring or bounce back from adversity (Garmezy, 1993). Rutter (1987) described resilience as the positive pole of people’s response to stress and adversity. Recent studies of resilience are closely tied to the emergence of developmental psychopathology and more specifically to pioneering studies that focused on the adaptation of children from dysfunctional families (Masten, Hubbard, Gest, Tellegen, Garmezy & Ramirez, 1999; Luthar, Cicchetti & Becker, 2000). These studies investigated a wide array of risk indicators such as perinatal hazards, parental psychopathology, and psychosocial disadvantage and loss (Masten, Best & Garmezy, 1990; Masten et al., 1999). The observation that many of the children were adjusting well despite adversity inspired efforts to understand the processes that avert psychopathology and facilitate positive adjustment among children whose development was threatened (i.e., resilience) [Masten et al., 1999].

The factors that seem to shape the individual’s ability to endure in the face of adversity are referred to as protective factors and risk factors (Rutter, 1987). The aforementioned concepts are more specific and narrowly defined than the construct of resilience. The defining feature of these factors is that there is a modification in the person’s response to adversity. It requires some form of intensification (vulnerability) or amelioration (protection) of the reaction to the factor that would usually lead to a
maladaptive outcome (Rutter, 1987). Vulnerability refers to the individual’s predisposition to develop different forms of psychopathology or behavioural ineffectiveness under high-risk conditions and reflects a susceptibility to negative outcomes (Zimmerman & Arunkumar, 1994). Protection in this case does not imply that risk is avoided, but rather that it is successfully managed (Rutter, 1987). Some individual protective factors that have been identified are autonomy and high self-esteem (Masten et al., 1999). These protective factors refer to personal qualities of individuals and do not acknowledge the fact that resilience may often be derived from factors external to the individual (Luthar et al., 2000).

Resilience was originally viewed as residing within the individual, while little attention was given to the family and the community as a source of resilience (Masten et al., 1999; McCubbin, McCubbin, Thompson, Han & Allen, 1997; Patterson, 2002a; Walsh, 1996, 2002). An emphasis on individual resilience could be limiting in various ways as outlined by Waller (2001). Firstly, resilience is a complex construct and viewing a person as either resilient or vulnerable at all times can be seen as limiting according to Waller (2001). Rutter (1987) and Luthar et al. (2000) also argued that resilience could not be seen as a fixed attribute of the individual. Longitudinal studies on the adjustment of at-risk children reflected the dynamic nature of resilience (Hetherington, 1989; Masten et al., 1999). Factors that appear to contribute to this dynamic nature include the emergence of new stressors as well as the functionality of current protective factors (Luthar et al., 2000). Secondly, a focus on individual resilience obscures the importance of the family and the community as potential sources of resilience. In addition, families and communities might be viewed as deficient, weak, and responsible for individuals’ inability to cope with challenges (Masten et al., 1999; Rutter, 1989; Zimmerman & Arunkumar, 1994; Waller, 2001). In the light of the outlined information it can be concluded that the concept of individual resilience does have certain limitations. However, there seems to be a growing recognition that resilience is multidimensional and multidetermined (McCubbin et al., 1997; Waller, 2001; Walsh, 2002). Zimmerman and Arunkumar (1994) suggested that resilience should be viewed as
relative rather than absolute, as the result of environmental as well as individual factors, and dependent on contextual factors (such as psychopathology, substance use). The following section focuses on resilience in the family context.

2.2.2 Family Resilience

Over the past two decades the field of family psychology has shifted attention from family weaknesses to family strengths (Walsh, 2002); viewing the family as challenged rather than damaged. This suggests that families possess qualities that help them to adjust and adapt during challenging times. The current interest in this adaptive behaviour reflects general trends in (a) family psychology, with an emphasis on strengths residing within the family, rather than a focus on deficits and pathology (Goldenberg & Goldenberg, 2004; Patterson, 2002a; Seligman, 1998); and (b) a paradigm shift from pathogenesis to salutogenesis (Patterson, 2002a). Although studies on family stress have been conducted for several years, research highlighting resilience as a significant variable related to the family system, has occurred only within recent times (De Haan, Hawley & Deal, 2002; Ganong & Coleman, 2002; Walsh, 1996, 2003). Walsh (1996) stated that research on family resilience is timely as the world seems to grow increasingly complex and unpredictable, while little support for the family exists. As with resilience in the individual, multiple definitions of family resilience have been proposed. McCubbin and McCubbin (1988) defined family resilience as “characteristics, dimensions and properties of families which help families to be resistant to disruption in the face of change and adaptive in the face of crisis situations” (p. 247). A more recent definition by McCubbin et al. (1997) defined family resilience as “the property of the family system that enables it to maintain its established patterns of functioning after being challenged and confronted by risk factors” (p. 2). They also introduced the concept of buoyancy, referring to the “family’s ability to recover quickly from a misfortune, trauma, or transitional event causing or calling for changes in the family’s pattern of
functioning” (p. 2). These definitions affirm the reparative potential of the family and should not be confused with the concept of invulnerability. The latter implies that families are untouched by the adversity they have to face whereas family resilience suggests that the family has the capacity to effectively adapt to the crises they experience (Zimmerman & Arunkumar, 1994). A more recent definition of family resilience is offered by McCubbin, Thompson and McCubbin (2001). According to these authors, resilience refers to “the positive behavioral patterns and functional competence individuals and family members demonstrate under stressful or adverse circumstances, which determine the family’s ability to recover by maintaining its integrity as a unit while insuring, and where necessary restoring, the well-being of family members and the family unit as a whole” (p. 5)

While families may not bounce back unscathed from adversity, resilience rather implies that families are effectively working through and learning from adversity by integrating the crises as a part of the life history of the family (Walsh, 2002). In fact, a crisis could be valuable for the family. Walsh (2002) asserted that a crisis could be a wake-up call for the family, highlighting what is important. It can become an opportunity for the reappraisal of priorities, facilitating new or renewed investment in relationships and life goals. In short, family members may discover untapped resources and strengths that they have not recognised in the past (Walsh, 2002).

The family’s reparative potential is shaped by family protective factors which have an effect on the family’s ability to endure in the face of adversity. Family protective factors in combination with family recovery factors facilitate the family’s ability to bounce back from a family crisis situation (McCubbin et al., 1997). Through years of research, some general resilience factors (protective and recovery) that are associated with both adjustment and adaptation in the family system have been identified (McCubbin et al., 1997). These factors are briefly discussed in the following section.
2.2.2.1 General Resilience Factors

Communication is a valuable tool which families can use to create a feeling of universality, to develop and utilise coping resources, and maintain and restore harmony and balance. According to Walsh (2003), this communication should consist of clear and consistent messages and ambiguous information should be clarified.

In times of crisis it appears that individual family members’ sense of self-reliance and independence plays a significant role in facilitating family adjustment and adaptation (McCubbin et al., 1997). The family’s spirituality also seems to be a protective factor (Yates & Masten, 2004). At times, tragic events in the family’s life cycle cannot be explained by reasoning and logic alone. Families might struggle to find meaning when a young child is diagnosed with a chronic illness and could search for meaning through their spiritual beliefs and practices (McCubbin et al., 1997; Walsh, 2003).

Flexibility has emerged as an important resilience factor in both the adjustment and adaptation processes. Flexibility implies that families change their patterns of functioning (i.e., roles, rules and meanings) and in some cases lifestyles; to achieve harmony and balance (McCubbin et al., 1997; Walsh, 2003).

Truthfulness is also an essential resilience factor, since ambiguity is an inevitable element of family crisis (Walsh, 2003). At a time where the family could benefit from a much-needed blueprint for managing the situation, they are often left with a lack of clarity and guidance from the larger community (McCubbin et al., 1997; McCubbin et al., 2001). Obtaining truthful information seems to be vital to the family’s adaptation process, especially where the family is compelled to change patterns of functioning as well as social, psychosocial and economic situations. Truthfulness is not only important in the family system, but also for medical, social and psychological intervention programmes that inform and support families in these challenging times (Anderson, Loughlin, Goldberg & Laffel,
Although truthfulness is important, families are often left with an unclear picture of their future or no picture at all in times of crisis (McCubbin et al., 2001).

Often changes in the families’ typical patterns of functioning leave the family with a sense of helplessness and diminished hope. Hope, which refers to wishes or desires that the family feel confident will be fulfilled, is a vital resilience factor in the process of adaptation (McCubbin et al., 1997). Hope is a future-orientated belief that enables the family to see beyond their problem-saturated present. It fuels energy and efforts to rise above adversity (Walsh, 2003). Another protective factor that is important is family hardiness (Hern, Beery & Barry, 2006; McCubbin et al., 1997; McCubbin et al., 2001). This refers to the family’s ability to “steel” themselves against adversity. To effectively work through a crisis, the family has to commit to work together as a team and actively work towards resolving the presenting crisis. Part of this process is to reframe the crisis as manageable and to affirm the family’s sense of control over the outcome (McCubbin et al., 1997).

Family routines and time spent together also provide the family with a sense of predictability and stability that fosters harmony and balance. During times of crisis, family time and routines are often set aside, disrupted, or cancelled and replaced by a complete devotion to the family crisis. According to McCubbin et al. (1997), the care of an ill family member or a family member living with a disability is best accompanied by a commitment and effort to sustain some family practices and routines in an attempt to maintain the family’s stability and continuity during times of stress. From this it follows that health can also be viewed as an important protective factor for the family. When family members experience health problems, the family system becomes vulnerable (Anderson et al., 2001; McCubbin et al., 1997). Although research confirming this line of reasoning is not conclusive, health of family members remains a viable protective and recovery factor in explaining the variability in resilience in the family system (McCubbin et al., 1997).
Finally, the family does not function in isolation, but as part of an interrelated system, which could offer additional, if not unique forms of support (McCubbin et al., 1997; Lo, 1999; Waller, 2001). The family could draw from a network of relationships that can help the family give meaning to the crisis situation, develop coping strategies, and foster the family’s ability to change (McCubbin et al., 1997). This section has provided an overview of the development of the constructs of individual and family resilience. In addition to this, general resilience factors that have been identified through years of research were outlined (McCubbin et al., 1997). The following section focuses on research trends in individual and family resilience and also highlights the resilience research that has been conducted in the South African context.

2.3 Research Review

Research on the construct of resilience has surged in recent times. Initially, the focus was on resilience in the individual which highlighted the possible value of the family as a source of resilience. The following section will provide a review of some of the research findings on individual and family resilience.

2.3.1 Individual Resilience

Resilience has become an important concept in child development and mental health theory and research (Masten et al., 1999; Rutter, 1987; Zimmerman & Arunkumar, 1994). The concept of resilience has a rich history embedded in longitudinal research on resilience in at-risk children (McCubbin et al., 1997; Waller, 2001). “Project Competence” is considered as one of the pioneering research projects that sparked interest in the construct of individual resilience (Garmezy, Masten & Tellegen, 1984). This longitudinal study was directed towards the study of stress and competence in children who were considered to be at risk for psychopathology due to maternal mental illness (e.g.,
schizophrenia). Results of this study reflected deficiencies in some groups of children, but what was more significant were the many at-risk children who manifested little if any indication of pathology or incompetence. These results led to a decision to turn “Project Competence” into a study of resilience (Garmezy et al., 1984). Subsequent studies on individual resilience primarily sought to understand how some children who were perceived to be at risk for pathology were able to overcome adversity and lead meaningful lives. Studies primarily focused on the identification of protective and risk factors rather than the process that leads to positive outcomes when faced with adversity (Masten et al., 1999; Walsh, 1996; Werner & Smith, 1993). Resilience was viewed as something inborn, rather than a strength factor of the family (Patterson, 2002b; Walsh, 1996, 2003).

Individual protective factors that have been identified in research projects include ego development and social skills, problem-solving skills (Masten et al., 1990) and a caring relationship with an adult (Masten et al., 1990; Zimmerman & Arunkumar, 1994). As time progressed, researchers moved toward recognition of the interaction between nature and nurture in the development of resilience (Garmezy et al., 1984; Walsh, 2002). However, this approach tended to hold a skeptical, linear view of family influence and researchers primarily focused on sources of resilience outside the family, namely mentors, teachers and therapists (Walsh, 2002; Zimmerman & Arunkumar, 1994). As a result, focused investigations on what makes the family system resilient in the face of normative changes as well as crises emerged at a slower pace (McCubbin et al., 1997). Although a large proportion of resilience research has focused on individual resilience, some researchers have advocated the importance of resilience as a concept in the field of family psychology (Patterson, 2002b; Waller, 2001; Walsh, 1996, 2003). Emerging research on individual resilience in children called attention to not only significant relationships with mentors and teachers, but also to the role of the family as a possible resource to protect children in the face of adversity (Hetherington, 1989; Masten et al., 1999; Walsh 2002a; Werner & Smith, 1993; Yates & Masten, 2004). At a family level, it was found that some children who thrive
in the face of adversity emerged from families that were warm, sensitive, had cohesive intrafamilial interactions and nurturant kinship networks (Garmezy et al., 1984; Yates & Masten, 2004). In summary, the literature suggests that the view of resilience as an individual construct evolved to one that increasingly acknowledged the role of other resources. The family was included as a possible resource that could be protective for children in the face of adversity. The development of resilience as a family level construct is discussed in the section that follows (Hawley, 2000; Walsh, 2002).

2.3.2 Family Resilience

Despite the slow progress in research on family resilience, it was inevitable that the concept of resilience would find a significant place in the field of research on the family. A systemic view of resilience in the individual links the emergence of resilience to three interrelated domains, namely, the individual, the family and the larger context (Cohler, 1987). According to McCubbin et al. (1997), studies that focused on children revealed the importance of the family system fostering resilience. Family resilience research has revealed some of the protective factors that are important to family adjustment as well as recovery factors that are essential to the adaptation process (McCubbin et al., 2001). Researchers are pressed to examine the family system and its resilience in the face of normative and non-normative conditions that leave the family vulnerable. Factors that seem to play an important role in the family’s ability to bounce back from adversity are family protective factors and family recovery factors (examples of protective and recovery factors are provided in section 2.2.2.1). While most child-focused studies have focused on protective factors, both family protective and family recovery factors are important lines of scientific inquiry. McCubbin et al. (1997) reiterated that the family attempts to use all its resources in a crisis situation.

Research that has investigated the dynamics of resilient families, has explored the impact of crises such as illness (Chesla, 1999; McCubbin & McCubbin, 1993; Shapiro, 2002) as well as families that
have been faced with social problems such as changes in the working environment (Mederer, 1999). Many of the studies that were conducted were primarily descriptive in nature with the goal of identifying family resources in resilient families that facilitate adaptation after a crisis has occurred (McCubbin & McCubbin, 1988). However, as research interest in the field of family resilience grew, researchers also emphasised the need for theory building (De Haan et al., 2002; Walsh, 1996, 2002) and the investigation of family typologies (McCubbin & McCubbin, 1988; McCubbin, Thompson, Pirner, & McCubbin, 1988; McCubbin, Thompson, & McCubbin, 2001). Recent studies have focused on the clinical implications of family resilience (i.e., how viewing families as resilient may affect clinical work) [Hawley, 2000; De Haan et al., 2002; Walsh, 2003]. The results suggested that a resilience-orientated view of the family empowers the family since they are all viewed as survivors of the crisis (Walsh, 2002; Hawley, 2000). This positive view of the family can be valuable for future crises (Hawley, 2000).

In the 25 years of research on families under stress, some general resilience factors were identified through a process of analysis and reanalysis of research findings (McCubbin et al., 1997). These general resilience factors include family problem-solving communication, equality, spirituality, flexibility, truthfulness, hope, family hardiness, family time and routine, social support and health (see section 2.2.2.1) [McCubbin et al., 1997]. According to research conducted by McCubbin, Thompson and McCubbin (2001), the family’s ethnicity could also impact the adaptation process. A study conducted by Greeff and Aspeling (2004) found various similarities as well as differences between the resilience factors that contributed to the adaptation of South-African and Belgian single-parent families. The literature suggests that family resilience is receiving more attention from researchers and is not a novel concept (Greeff, 2004; Greeff & Aspeling, 2004; Greeff & Human, 2004). However, research on family resilience in the South African context is still limited (Greeff, 2004).
2.3.3 Resilience Research in the South African Context

In South Africa the construct of individual resilience was studied by researchers like Wissing (1996). As interest in the salutogenic paradigm grew, family researchers began to investigate resilience within the family context (Greeff, 2004). Studies that have been conducted have focused on identifying and describing resilience factors in families in which a parent accepted a voluntary retrenchment package (Der Kinderen & Greeff, 2003); families in which a parent has died (Greeff & Human, 2004), divorced families (Greeff & Van der Merwe, 2004) as well as single-parent families (Greeff & Aspeling, 2004; Greeff & Ritman, 2005). Results from studies conducted in the South African context reveal that family hardiness characteristics, such as the internal strengths and durability of the family unit play a significant role in the family’s resilience. The importance of the support and utilisation of members of the immediate family, the extended family and friends was also highlighted (Greeff & Human, 2004; Greeff & Van der Merwe, 2004; Human, 2001). Currently, a family resilience project at the University of Stellenbosch is investigating the characteristics of different population groups of families affected by normative or non-normative crises. This project includes African (e.g., Zulu and Xhosa speaking) and Coloured (Afrikaans and English speaking) families in South Africa. The abovementioned studies, as well as the present study formed part of the family resilience project which was funded by the South Africa Netherlands Research Programme on Alternatives in Development (i.e., SANPAD). In summary, the literature suggests that South African families are able to bounce back in the face of challenges and that they make use of various resources in their attempt to adjust and adapt to crises (Greeff & Human, 2004; Greeff & Van der Merwe, 2004).
2.4 **Advantages of a Family Resilience Framework**

McCubbin et al. (1997) alerted us to the stressors and demands that will be faced by families in the 21st century. A resilience framework is timely in helping families to manage unprecedented challenges as they and the environment around them change at an accelerated pace (Walsh, 2002). The use of a family resilience framework offers several advantages. By definition, the framework focuses on strengths under strain, rather than on pathology. Secondly, it assumes that no single model fits all families or their unique situations. No definition of an ideal family is provided. The reasoning behind this is that myths of what constitutes an ideal family can exacerbate the sense of deficiency for families in crisis, impeding their ability to adapt. What is of greater importance are the family processes, with a specific focus on the quality of care and the level of commitment in relationships. Thirdly, processes for optimal functioning are seen as dynamic as challenges unfold and families evolve across the family life cycle (Walsh, 2002). Yates and Masten (2004) also argued that there is no singular pattern of resilient adaptation and that multiple mechanisms and processes are involved in these developmental pathways. The family resilience framework selected for the purpose of this study is the Resiliency Model of Family Stress, Adjustment and Adaptation. This model was used to conceptualise the families’ resilience since it represents the most recent development in the field of family resilience frameworks (McCubbin & McCubbin, 2001). The Resiliency Model of Family Stress, Adjustment and Adaptation is discussed in the following section.

2.5 **Conceptual Framework**

Since the Resiliency Model of Family Stress, Adjustment and Adaptation was used as a conceptual framework in this study, it is important to review the development of this conceptual model. This is followed by a discussion of the two processes that are associated with family resilience, namely adjustment and adaptation.
2.5.1 The Development of the Resiliency Model of Family Stress, Adjustment and Adaptation

The Resiliency Model of Family Stress, Adjustment and Adaptation was developed by McCubbin and McCubbin (2001) and originated from the pioneer-work of Reuben Hill (1949) who investigated pre-crisis factors related to family stress during wartime. Hill’s research led to the development of the ABCX model (Hill, 1949). The model primarily focused on the role of the stressor (A), resources (B) and the definition of the stressor (C) as mediating factors in the family’s adaptation (X) [Hill, 1949; McCubbin et al., 2001]. This sparked further interest in the family system and more specifically initiated research in conceptualising family coping and adaptation (Hill, 1949; McCubbin & Patterson, 1983). The original ABCX model was developed into the more comprehensive Double ABCX model, where the family’s perception of the original stressor was expanded to include the family’s perception of other stressors as well as their view of family resources (Patterson & Garwick, 1994). Family resources that were identified included coping and social support (McCubbin & Patterson, 1983). In an effort to highlight the importance of adaptation, the Double ABCX model was extended into a process-oriented model, namely the Family Adjustment Adaptation Response (FAAR) model (Patterson & Garwick, 1994). This model highlighted the processes involved in balancing the demands that the family face with the available resources. Both the Double ABCX model and the FAAR model focused on pre-crisis and post-crisis factors. The FAAR model emphasised domains such as the coping mechanisms, problem solving, and coping skills that the family employs during the adjustment processes (McCubbin et al., 2001). The FAAR model was followed by the Typology Model of Family Adjustment and Adaptation (McCubbin et al., 2001). This was the next step in theory building since this model focused on both pre-and post-crisis factors in addition to highlighting the importance of family patterns of functioning.

The Resiliency Model of Family Stress, Adjustment and Adaptation represents the most recent development in the abovementioned models (McCubbin & McCubbin, 2001). The model integrates
elements from all the abovementioned models, but the main focus of the model is the discovery and testing of resilience factor processes in families. The model adds four domains of family functioning that were found to be significant in the adjustment and adaptation processes (McCubbin et al., 2001). This includes interpersonal relationships; development, well-being and spirituality; community ties; as well as structure and functioning. The model highlights important family processes such as the family’s attempt to restore harmony and balance in the family system in the face of adversity. In addition to this, the model stresses the importance of five levels of family appraisal and includes the family’s culture and ethnicity which was found to play a significant role in the family’s development and recovery. Finally, the model also considers family relationships as a factor that plays a central role in the family’s adaptation (McCubbin et al., 2001).

Family resilience involves two processes that are distinguishable, yet interrelated processes. These processes, namely adjustment and adaptation, play a unique role in promoting the family’s ability to adapt and bounce back after a family crisis situation (McCubbin et al., 1997). The following sections outline the dynamics of these two processes.

2.5.2 The Process of Adjustment

Adjustment involves the influence of family protective factors in promoting the family’s ability and attempts to maintain their level of functioning and integrity, and complete normative developmental tasks in the face of adversity (McCubbin et al., 1997). Family protective factors shape the family’s ability to endure in the face of adversity and, in combination with recovery factors, play a significant role in facilitating the family’s ability to bounce back from a crisis (McCubbin et al., 1997). The adjustment phase is diagrammatically represented in Figure 1 on the following page.
Figure 1. The Adjustment Phase of the Resiliency Model of Family Stress, Adjustment and Adaptation (McCubbin, Thompson, & McCubbin, 2001, pg. 15).
When the family is faced with a stressor, the outcome of the family’s effort to adjust is influenced by various related factors. The Stressor (A) and its severity interact with the family’s level of Vulnerability (V). The severity of a stressor is influenced by factors such as the degree to which the stressor threatens the family’s level of stability, and the extent to which it disrupts the functioning of the family or places demands on the family that the family find difficult to manage. Family vulnerability can be described as the family’s susceptibility to deterioration and dysfunction in the face of adversity (McCubbin et al., 1997). The family is seldom in a situation where they are only dealing with one stressor. The family’s level of vulnerability is affected by the pile-up of family stresses, strains and transitions that occur simultaneously with the stressor as well as where the family are in terms of the family’s life cycle (McCubbin et al., 2001).

The family’s level of vulnerability interacts with the family typology, referred to as the Established patterns of functioning (T). These patterns are predictable and discernible. Four family types have been identified, namely regenerative families, versatile (previously referred to as resilient) families, rhythmic families and traditionalistic families (McCubbin & McCubbin, 1988; McCubbin et al., 2001). Regenerative families can be perceived to have a high level of family hardiness and family coherence. This implies that the family copes with family crises by trusting each other, showing respect and maintaining an emotional calm and stability. These families have faith in their ability to cope with challenges, they are able to accept stressful life events and actively work together to solve problems. Furthermore, they are secure in their sense of purpose and confident about their ability to make future plans, and view life as meaningful. Related to the above-mentioned perceptions, regenerative families feel that they are in control and therefore, not victims of circumstance. In short, regenerative families are active, in control, and when faced with life challenges, are also more nurturing, loyal and tolerant of hardships (McCubbin, Thompson, Pirner, & McCubbin, 1988; McCubbin et al., 2001).
The Versatile family’s strength lies in their ability to change. These families have high levels of family bonding and flexibility. Family bonding refers to the degree to which the family is emotionally bonded together into a meaningful family unit. Family flexibility refers to the family’s ability to shape and change rules, boundaries and roles in an attempt to accommodate changing dynamics within and outside of the family system. Versatile families are dependent on each other for support, feel close to each other and find it easy to decide what to do when it comes to decisions that affect the family (McCubbin et al., 1988).

Rhythmic families value the importance of creating predictable activities and routines in an attempt to foster a shared sense of purpose and meaning of family togetherness, regularity and predictability (McCubbin et al., 1988, McCubbin et al., 2001). The Traditionalistic family typology highlights the importance of traditions and celebrations. Traditions refer to specific family behaviours and practices (e.g., decorating for holidays and special rules to follow on religious occasions) which families choose to integrate and maintain in an effort to sustain beliefs and values that can be passed on to future generations. Family celebrations punctuate and highlight events and situations that are significant to the family. Celebrations such as a family birthday, special occasions (e.g., Mother’s Day) and holidays (e.g., New Year’s Day) represent a few of the events that can be celebrated by families (McCubbin et al., 1988; McCubbin et al., 2001).

The abovementioned components (A, V and T) now interact with the family’s Resistance resources (B). Family resistance resources refer to the family’s abilities and capabilities to tackle and manage the stressor and maintain and promote harmony and balance in the face of adversity. The family’s goal would be to avoid a crisis, disharmony and significant changes in the family’s established patterns of functioning (McCubbin et al., 2001). To manage this crisis effectively, family resources become part of the family’s capabilities for resisting a crisis and promoting family resilience, leading to successful adjustment. Some of the essential family resistance resources include social support, cohesiveness,
financial stability, flexibility, hardiness, shared spiritual beliefs, open communication and traditions. In turn, the family’s resistance resources (B) interact with the family’s appraisal of the stressor (C).

The family’s appraisal of the stressor refers to the family’s definition of the significance of the stressor and the resultant difficulties. The definition of a stressor may range from being uncontrollable (i.e., something that could possibly lead to the family’s downfall); to viewing it as a minor incident and a challenge to be met with growth-producing outcomes (McCubbin et al., 2001).

The family’s appraisal of the stressor then interacts with their problem-solving and coping strategies (PSC). The family employs their problem-solving skills to effectively manage the stress caused by the stressor by employing coping resources to manage or eliminate the stress and the related hardships. In the process of problem solving, the family organises stressors and hardships into manageable tasks; explores alternative options to manage each component, takes active steps to resolve issues, and adopts more constructive patterns of problem solving communication. Some of the strategies that a family could consider in an attempt to restore balance and harmony include adopting more effective communication styles, seeking help from friends, and taking advantage of the help that is offered by friends (McCubbin et al., 2001).

The above-mentioned components (A, V, T B, C, PSC) interact with one another in order to determine the family’s level of adjustment. Whereas the desired outcome of the adjustment process is bonadjustment, maladjustment may occur. Bonadjustment requires minor adjustments in the family system and its functioning. When the family is faced with a major stressor, minor adjustments may not be sufficient to attain harmony and balance in the family system. Due to the severity of the stressor, substantial changes in the family system in terms of family roles, values, priorities, boundaries and overall general functioning have to be considered. Major stressors may challenge the family’s established patterns of functioning to such an extent that the family will most likely experience maladjustment and the consequent experience of a crisis (McCubbin et al., 2001).
2.5.3 The Process of Adaptation

When a family crisis is experienced, the family will enter into the adaptation phase of the Resiliency Model of Family Stress, Adjustment and Adaptation (McCubbin & McCubbin, 2001). Figure 2 on the following page provides a diagrammatical representation of the adaptation phase of the Resiliency Model of Family Stress, Adjustment and Adaptation.
Figure 2: The Adaptation Phase of the Resiliency Model of Family Stress, Adjustment and Adaptation.
The Resiliency Model highlights various adaptation-orientated elements and resilience processes in an attempt to describe the family’s behaviour in the process of post-crisis adaptation. The adaptation phase involves various interacting components that facilitate the family’s adaptation to a crisis to regain harmony and balance in the family. Adaptation (XX) is the term that is used to describe the outcome of family efforts to facilitate a new level of balance and harmony after a crisis has been experienced. McCubbin et al. (2001) defined family crisis as “a state of imbalance, disharmony and disorganisation in the family system” (p. 22).

The adaptation phase of the Resiliency Model was the main focus of the present research project. For the purposes of this study, the identified crisis in the family was a child living with a chronic illness and more specifically, Type I diabetes. An illness and health maintenance can be viewed as family stressors when they produce demands that the family cannot cope with. Stress results when there is a perceived or actual imbalance between the family’s capabilities and the demands of the illness that can leave the family in a state of crisis. For the family to regain their sense of harmony and balance, they have to attend to the stressor (in this case, the management of diabetes in the child) and adapt to it (McCubbin & McCubbin, 1993).

Families do not exist in isolation and therefore they seldom deal with only one stressor (A) such as an illness. Demands tend to accumulate (AA), which has an impact on the family’s level of vulnerability (McCubbin & McCubbin, 1993). McCubbin et al. (2001) stated that the family’s adaptation is a process achieved over time within a dynamic social context. The above-mentioned authors identified nine broad categories of stressors that could contribute to a pile-up of stressors and impact on the family’s level of vulnerability. The family’s level of vulnerability will contribute to the crisis situation and have an impact on the ease with which a family achieves harmony and balance (McCubbin et al., 2001). In addition to the initial stressor, the family could also be dealing with normative transitions, prior family strains and unexpected situational demands, as well as contextual
difficulties. The consequences of the family’s attempts to adjust to the crisis could also add to the family’s burden (McCubbin et al., 2001). Stress can also arise from intrafamily and social ambiguity caused by the community’s vague guidelines on how families should act or cope effectively with the crisis. In addition to this, newly established patterns of functioning demand additive changes in the family. These newly established patterns of functioning could also be incongruent with or in conflict with the family’s schema (i.e., values and beliefs) and/or the family’s paradigms (i.e., rules and expectations). These newly adopted patterns of functioning could also be in conflict or not compatible with established patterns of functioning. The above-mentioned factors illustrate how additional stressors may undermine or impair the family’s ability to adjust to the crisis (McCubbin et al., 2001).

The family’s ability to adapt is also influenced by the family’s established patterns of functioning that are predictable and discernable (i.e., family type) [McCubbin et al., 2001]. Of the family’s own accord or with some type of intervention such as family therapy, the family might take on the challenge of regeneration by entering into a process of change to achieve a positive level of adaptation. This process can be triggered by a pile-up of demands, the stressor(s) and dysfunctional and/or deteriorated family patterns of functioning (T) that lead to maladjustment and a crisis situation (X). If the family wants to achieve the more positive outcome of bonadaptation, the family has to make active attempts to restore the harmony and balance in the family (McCubbin et al., 2001).

The process of bonadaptation does not only prompt changes within the family, but also facilitates change in the relational processes of the family with the community. In an attempt to regain balance and harmony in the family, the family has to find a balance and fit at both the individual-to-family and family-to-community levels of functioning. The systemic nature of the family seems to play a significant role in the adaptation process. A brief description of the factors that a family could employ in the process of adaptation is provided in the section to follow.
In the process of adaptation the family may employ revitalised and retained patterns of functioning (T) (e.g., traditions, celebrations, ethnic practices), as well as newly instituted patterns of functioning (TT) (e.g., new boundaries, rules and patterns of communication). The family also employs existing as well as new psychological, social and family resources (BB). The family could utilise their own internal resources and capabilities (BB) such as hardiness, coalitions, support and respect and/or reach out to sources of social support, such as extended family, the neighborhood, church, community or friends (BBB). Another important resource that is available to the family is their appraisal of the stressor. Formulating a definition of the stressor as well as evaluating its severity is the initial level of assessment. The appraisal of the stressor is shaped by four other levels of appraisal, namely the family’s appraisal of the situation (CC); schemas (CCCCC) [e.g., the family’s shared values and belief systems]; a sense of coherence (CCCC) [e.g., the view of the family’s sense of order, trust, predictability and manageability]; and paradigms (CCC) [e.g., shared expectations in terms of areas of family functioning, such as discipline] (McCubbin et al., 2001). The four levels of appraisal will be briefly described.

While the family is seeking internal and/or external sources of support, the family simultaneously evaluates and interprets their experiences (i.e., situational appraisal) in an attempt to break the problem situation (i.e., the stressor) into more manageable tasks (McCubbin & McCubbin, 1993). In the process of making this situational appraisal (CC), the family weighs up their capabilities against the demands on their established patterns of functioning created by the crisis. The other levels of appraisal further influence the situational appraisal (CC) [McCubbin et al., 2001].

A family’s schema (CCCCC) is integral to the family’s appraisal of incoming stimuli, such as experiences and behaviours. It is expressed through the family’s worldview and includes family values and beliefs for such activities as respecting and maintaining the family’s ethnic heritage, and respecting one’s elders. Not only does it give order, harmony, balance and structure to family life, it also plays a
significant role in shaping and justifying the family’s patterns of functioning, as well as the family’s problem-solving and coping behaviours and patterns (McCubbin et al., 2001). According to Hawley (2000), families with healthy schemas tend to focus more on a collective “we” than an “I”; are able to accept less than perfect solutions to challenges; and tend to have a relativistic view of the world and their place in it.

The family’s sense of coherence (CCCC) forms the motivational and appraisal bases for transforming the family’s potential resources into actual resources. The family’s sense of coherence refers to the dynamic feeling that the world is comprehensible (internal and external environments are structured, predictable and explicable), manageable (resources are available to meet the demands), and meaningful (life challenges are worthy of investment by the family) [Hawley, 2000; McCubbin et al., 2001].

Family paradigms refer to expectations and rules that are shared and shaped by the family unit. These paradigms offer the family a guide for the family’s development of patterns of functioning (for example, parenting, work and family communication and spirituality) [McCubbin et al., 2001]. The above-mentioned levels of appraisal also have an impact on the definition of the Stressor (C) that was previously made by the family (McCubbin et al., 2001).

Finally, the established patterns of functioning, resources and levels of appraisal influence and are influenced by the family’s problem-solving and coping repertoire (PSC). In the process of adaptation, the family also employs their problem-solving and coping resources (PSC) and creates, changes and discards patterns of family functioning to restore harmony and balance and a satisfactory level of adaptation (McCubbin et al., 2001). This process prompts changes within the family as well as in the family’s relationship to the larger community and environment.

The dynamic interplay between the abovementioned components is cyclic in nature. If the outcome of the adaptation process is successful, bonadaptation occurs. Bonadaptation essentially implies that the
family is able to stabilise, promote the individual development of its members, and achieve a sense of congruence despite being faced with major changes in the patterns of family functioning (McCubbin & McCubbin, 1993). On the other hand, families may not achieve a satisfactory level of adaptation and experience a maladaptive outcome (i.e., maladaptation). Consequently, the family returns to a crisis situation (XX) and the cycle repeats itself until more successful patterns of adaptation are adopted.

2.5.4 The Applicability of the Resiliency Model of Family Stress, Adjustment and Adaptation to the Present Study

An illness and health maintenance can be viewed as family stressors when they produce demands that the family cannot cope with (McCubbin & McCubbin, 1993). A chronic illness such as Type I diabetes places various demands on the diagnosed individual as well as on the family (Hentinen & Kyngas, 1998; Snoek & Skinner, 2002; Walsh, 2002). Stress results when there is a perceived or actual imbalance between the family’s capabilities and the demands of the illness. To cope with the demands of diabetes, the illness has to be managed in an attempt to adapt (Seppanen, Kyngas & Nikkonen, 1999). Although the physiological treatment of diabetes is important, the impact of psychosocial factors on metabolic control cannot be denied (Hoare, Mann & Dunn, 2000; Seppanen et al., 1999; Shapiro, 2002; Tsamparli & Kounenou, 2004).

One of the psychosocial factors that seem to mediate the child’s adaptation to diabetes is the family (White, Kolman, Wexler, Polin & Winter, 1984). It has been suggested that diabetes care in children should focus on family-centred approaches (Marshall, Fleming, Gillibrand, & Carter, 2002). The literature on the management of Type I diabetes in children suggests that while the child with diabetes is the diagnosed patient, the family has diabetes (Anderson et al., 2001; DeCoster, 2001; Lindsey, 1983; Lo, 1999; Williams, 1999). This seems to be in line with one of the basic assumptions of a family resilience framework, namely that crises and challenges impact the whole family, and in turn,
family processes mediate the adaptation of all members and the family unit (McCubbin et al., 2001; Walsh, 2003).

There has also been a call for a more comprehensive recognition of the variables that could have an impact on the family’s adaptation to diabetes. It has been suggested that effective pediatric care cannot be considered holistic unless acknowledgement and understanding is sought of the psychosocial constructs that these children operate under (Marshall et al., 2002). The Resiliency Model of Family Stress, Adjustment and Adaptation of McCubbin et al. (2001) served as a valuable tool to identify and conceptualise some of the factors that play a role in a family’s adjustment and adaptation process.

McCubbin et al. (2001) asserted that the family is not a static unit, and therefore the family will have to deal with other stressors in addition to the new care-giving demands of their child with diabetes. This could prove to be difficult, since the natural initial response to the news of a chronic illness is often denial (DeCoster, 2001). At this time, the information and support that is provided by the medical facilities where the child was diagnosed is essential, but this support cannot be provided on a continuous basis (Lowes, Lyne, & Gregory, 2004; Seppanen et al., 1999). In addition to this, the family might not effectively utilise important forms of social support such as the extended family or friends and teachers, since they find it difficult to entrust the care of their child to other people (Seppanen et al., 1999; Tsamparli & Kounenou, 2004). In short, the family has to rely on itself to adjust and adapt to the diabetes. The family has to attend to the stressor (in this case, the management of diabetes in the child) and subsequently adjust and adapt to it (McCubbin & McCubbin, 1993).

A family’s ability to make changes in their roles, rules and relational patterns in the attempt to adjust and adapt to the unique needs of a child with a chronic illness would be evidence of resilience (Patterson, 2002a). Since the very outcome of the Resiliency Model of Family Stress, Adjustment and Adaptation is adjustment and adaptation, the model was found to be relevant to the present study. The Resiliency Model of Family Stress, Adjustment and Adaptation also provided a framework to explore
and describe factors that contribute to families’ adaptation and created a better understanding of these factors. In future, this information could be used to inform the development of professional support and counselling for families to build resilience in the face of adversity (Seppanen et al., 1999; Shapiro, 2002).

2.6 Conclusion

Chapter Two provided a brief overview of the development of the construct resilience in the field of positive psychology. In the past resilience was viewed as an individual, inherent quality, but as time progressed researchers started to recognise the importance of the individual’s family and larger community as contributing factors to resilience in the individual. Research on individual resilience seems to have contributed to this paradigm shift in that results suggested that an individual’s family could contribute to their resilience. While the study of individual resilience had its roots in developmental psychopathology, the study of family resilience is rooted in the more recent salutogenic orientation, which implies that it focuses on the strengths of the family rather than deficits. In addition to this, it acknowledges the importance of the individual and the family, as well as the environment in facilitating adjustment and adaptation, which is important in the South African multi-cultural context, and allows for a richer understanding of the construct of resilience. However, both research on individual and family resilience can be viewed as important areas of scientific inquiry since they contribute to the identification of resilience factors and their resultant promotion. This seems to be in line with what Seligman (1998) referred to as positive psychology.

As resilience factors are identified, they can be used to inform intervention programmes that support vulnerable families. As families become more resilient in dealing with crises and weathering persistent stressors, families become more adept at meeting challenges. The Resiliency Model of Family Stress, Adjustment and Adaptation was used to conceptualise the adjustment and adaptation
process in a family after a child was diagnosed with Type I diabetes. Chapter Three provides more insight into Type I diabetes and its impact on the family.
3.1 Introduction

In the previous chapter, an overview of individual and family resilience was provided with a specific focus on the Resiliency Model of Family Stress, Adjustment and Adaptation. Brief mention was also made of the value of the afore-mentioned model in the conceptualisation of the adjustment and adaptation process after a crisis has occurred. The present chapter sheds light on a crisis that some families face, namely the diagnosis of a serious chronic illness in a child, in this case diabetes mellitus. Most literature encourages an integration of both medical and psychosocial factors to gain a better understanding of the dynamics surrounding diabetes as well as to enhance the management of the diabetes by the individual and the family (Daneman & Frank, 1998; Lowes, Lyne & Gregory, 2004; Marshall, Fleming, Gillibrand & Carter, 2002; Seppannen, Kyngas & Nikkonen, 1999). In light of this information, this chapter sheds light on the biopsychosocial factors that have an impact on families’ adjustment and adaptation to life with a child living with Type I diabetes.

Diabetes mellitus refers to a cluster of endocrine diseases. Two types of diabetes mellitus exist, namely Type I diabetes and Type II diabetes, of which definitions will be provided. For the purposes of this study, Type I diabetes was the identified variable. Families with a child living with Type I diabetes face a myriad of challenges such as the possible complications that are associated with this condition. Consequently, the management of the child living with diabetes is important to ensure the child’s normal development, to maintain good metabolic control and to prevent complications.

Chapter Three provides a brief overview of the basic management of Type I diabetes to illustrate some of the stressors that the family might have to face, which could have an impact on the family’s adjustment and adaptation. The management of diabetes in the child requires active involvement
from the whole family, leading to significant changes in the family system. Some of the challenges that the family might have to face after the diagnosis of diabetes are discussed. The discussion also focuses on the psychosocial impact of diabetes on the individual child, the parents (or caregivers) of the child, and the siblings. Brief mention is made of the challenges related to systems external to the family, such as the school and health care professionals.

Although living with a child with diabetes adds additional strain to the family, families are able to employ their coping resources and adjust and adapt to this condition. Some of these factors that are associated with adaptation in families living with a child with diabetes are discussed. To understand the possible challenges that diabetes might pose to the family, the following paragraphs focus on what diabetes is, as well as providing a brief description of the two types of diabetes.

3.2 Defining Diabetes Mellitus

Diabetes mellitus refers to a cluster of endocrine diseases that impact the body’s ability to utilise the glucose that is present in energy providing foods. Glucose refers to a form of sugar that can only enter body cells with the assistance of a hormone called insulin (DeCoster, 2001). The pancreas gland secretes insulin and when the pancreas fails to supply enough insulin, or the insulin does not work properly, glucose accumulates in the bloodstream. The accumulated levels of glucose will reach a stage where it is physiologically intolerable, leading to damage of the capillaries and blood vessels (DeCoster, 2001). Two types of diabetes mellitus have been identified. A definition of the two types is provided.

3.2.1 Type I Diabetes

Type I diabetes was formerly known as insulin-dependent diabetes. It is also known as juvenile diabetes, since the majority of people who are diagnosed with Type I diabetes are younger than forty as it typically develops in childhood and adolescence (Caltabiano, Byrne, Martin & Sarafino, 2002; Kaplan-Mayer, 2004). Although the researcher could not find statistics that indicate the
prevalence or demographics of people living with Type I diabetes in the South African context, the literature suggests that more research is needed on this chronic condition since more children are being diagnosed with Type I diabetes than in the past (Akerblom, 1998; Kaplan-Mayer, 2004). Caltabiano et al. (2002) stated that Type I diabetes accounts for approximately five to ten percent of diabetes cases. Type I diabetes is an autoimmune disease which destroys insulin-producing beta cells in the pancreas (Kaplan-Mayer, 2004). The result is that the pancreas does not secrete enough, or any insulin (DeCoster, 2001).

Insulin is important since a lack of insulin prevents the blood sugar level from being regulated by the body’s control mechanisms (Brannon & Feist, 2000). Without this supply of glucose, the body will starve to death (Kaplan-Mayer, 2004). Due to this factor, people living with Type I diabetes require a daily supply of infused insulin, either through injections or an insulin pump (Kaplan-Mayer, 2004).

Individuals who develop Type I diabetes might have a genetic susceptibility to the condition, but it seems that not all people who are susceptible develop Type I diabetes. Akerblom (1998); Couper (2001), and Caltabiano et al. (2002) have highlighted the critical role of environmental factors as well as viral infections.

3.2.2 Type II Diabetes

Type II diabetes was formerly known as noninsulin-dependent diabetes and is far more common than Type I diabetes. Over 90% of people that have diabetes mellitus, have Type II diabetes (Caltabiano et al., 2002; Kaplan-Mayer, 2004). With Type II diabetes, the insulin the pancreas produces is either not enough or does not work effectively (Brannon & Feist, 2000; DeCoster, 2001). This is due to the fact that the people with Type II diabetes gradually lose the ability to control the level of glucose in their blood because they are resistant to insulin (Caltabiano et al., 2002; Kaplan-Mayer, 2004). One of the leading causes of Type II diabetes is obesity (Brannon & Feist, 2000; Kaplan-Mayer, 2004). This type of diabetes is managed in various ways such as by
diet, exercise and oral medication. When this proves not to be effective, the individual might have to receive an injected supply of insulin (DeCoster, 2001). The proper management of both Type I and Type II diabetes is important in an attempt to prevent complications (Anderson, Loughlin, Goldberg & Laffel, 2001; DeCoster, 2001). Some of the complications that are associated with diabetes mellitus are discussed in the following section. Since the focus of this study was on families living with children with Type I diabetes, specific reference is made to Type I diabetes.

3.3 The Challenges of Living with Type I Diabetes

The parents of a child living with Type I diabetes face a myriad of challenges and changes in the rearing and care of their child (Hentinen & Kyngas, 1998; Walsh, 2002). Anderson et al. (2001) stated that children with chronic diseases such as diabetes are at an increased risk of medical and psychosocial problems. The following section focuses on the complications that are associated with Type I diabetes.

3.3.1 Complications Associated with Type I Diabetes

Not only is the diagnosis sudden and unexpected in many cases, but the family is also faced with the possible physical complications related to diabetes mellitus (DeCoster, 2001; Patterson & Garwick, 1994). Physiologically intolerable levels of glucose could lead to complications such as renal failure, blindness, peripheral neuropathy, peripheral vascular disease and amputations. Individuals diagnosed with diabetes mellitus also represent a population that is at a higher risk of strokes, cardiac arrests and glaucoma if compared with a group of the same age without diabetes (DeCoster, 2001; Lo, 1999; Trief, Sandberg, Greenberg, Graff, Castranova, Yoon, & Weinstock, 2003).

The above-mentioned difficulties shed light on the physical complications that are associated with Type I diabetes. The following section will focus on the assortment of adaptive tasks that the
family has to learn in an attempt to manage the symptoms and complications related to Type I diabetes (DeCoster, 2001; Seppanen et al., 1999).

3.3.2 The Management of Type I Diabetes

In view of the physical complications related to uncontrolled Type I diabetes, it can be concluded that the successful management of diabetes is crucially important. The goals of the treatment regimen are to keep blood sugar levels stable, to avoid complications that are associated with the condition, and to ensure the child’s normal development (DeCoster, 2001; Seppanen et al., 1999). Type I diabetes is often singled out as one of the chronic childhood diseases that necessitate significant behavioural adaptation from not only the diagnosed child, but also the family (Anderson et al., 2001, Charron-Prochownik, & Kovacs, 2000; Seppanen et al., 1999). When the child living with Type I diabetes is young, the family might have to face additional challenges (Litton, Rice, Friedman, Oden, Lee & Freemark, 2002).

The management of diabetes in a young child poses unique challenges to the family because of variations in food intake and exercise, the difficulty of administering low doses of insulin, and viral infections. Younger children are also more sensitive to short-acting insulin and can often not tell their caregivers when they are having symptoms of hypoglycemia (Litton et al., 2002). For the family to cope with these unique challenges related to diabetes, support from diabetic clinics has been highlighted as an important source of support for the family (Seppanen et al., 1999). However, these resources are not available to the family on a daily basis (Lowes et al., 2004; Seppanen et al., 1999) and therefore, there has been a call for family-centred approaches based in the community, rather than hospitalised care (Lowes et al., 2004; Marshall et al., 2001; Matthams, 2003).

Due to limited, time-bound external resources, the family has to rely on itself to adapt to the crises, requiring considerable resilience to adapt (Anderson et al., 2001; Lindsey, 1983; Shapiro, 2002). In essence, the responsibility for decision-making regarding the child’s daily survival and
treatment regimen becomes the family’s continued responsibility. For the family to manage the child’s condition effectively, accurate and adequate information regarding diabetes and its management is important (Lowes et al., 2004; Seppanen et al., 1999). Not only is this information important for the metabolic control of diabetes but it also increases the parent’s self-confidence and sense of control (Seppanen et al., 1999). The tasks related to the metabolic control will be outlined.

One of the basic goals in diabetes management is to prevent fluctuations in blood sugar levels (Anderson et al., 2001; DeCoster, 2001). In an attempt to attain this goal, family members simultaneously become surrogate dieticians, doctors and diabetes educators (Lindsey, 1983; Lowes et al., 2004).

Immediately following the diagnosis of diabetes, families become responsible for insulin injections, monitoring blood sugar with glucose monitoring systems, and the management of meals and physical activity, since these factors are important in maintaining normal blood sugar levels (Anderson et al., 2001; DeCoster, 2001; Lindsey, 1983). For the family to adjust and adapt, the above-mentioned management tasks must be integrated into the family’s normal lifestyle (Lowes et al., 2004). The process of adjustment and adaptation is further complicated by the fact that unstable blood sugar levels are common in younger children. Both the child that is diagnosed with diabetes and the family struggle with opposing difficulties related to high (hyperglycemic) and low (hypoglycemic) blood sugar levels. The family has to try and prevent frequent hypoglycemia which could result in seizures and unconsciousness, while hyperglycemia is associated with long-term complications such as blindness, nerve damage and kidney disease (Anderson et al., 2001; Lindsey, 1983). In short, the family needs to adopt new routines and rituals to incorporate the special requirements of the chronic illness (Patterson, 2002a) and integrate these with the old routines and rituals of the family. These additional changes to the family system can leave the family in a state of uncertainty and can be distressful to both the child with diabetes and other family members (Litton et al., 2002; Lowes et al., 2004; Seppanen et al., 1999).
In summary, the metabolic management of diabetes poses many challenges to the family and seems to add to the initial stress related to the diagnosis of the condition in the child. As mentioned in Chapter Two, families are seldom dealing with one stressor at a time (in this case the management of the diabetes), but stressors tend to accumulate. An accumulation of stressors could add to the family’s level of vulnerability and have an impact on the family’s adaptation process (Marshall et al., 2002). Sadock and Sadock (2003) argued that the stressors of today are tomorrow’s vulnerabilities. However, while Type I diabetes could put additional strain on the family, it could also be a time where family strengths come to the fore (Marshall et al., 2002). While this section has focused on the pathophysiology of Type I diabetes and the role of the family in its management, the next section will outline the psychosocial factors related to families living with a child with Type I diabetes.

3.3.3 Psychosocial Challenges

The previous section primarily focused on the challenges related to the medical management of Type I diabetes. Another challenge that the family might have to face, is the impact of stress on the child with diabetes as well as the other family members. Literature suggests that stress can have a significant impact on the effective management of diabetes. Psychological and physical stress can impair the control of diabetes considerably and could lead to unstable blood glucose levels and recurrent hospitalisations (McDougal, 2002; Tubiana-Rufi, Moret, Czernichow & Chwalow, 1998; White, Kolman, Wexler, Polin & Winter, 1984).

If children are to adjust and adapt to diabetes, it must be managed effectively. This effective management includes coping with stress effectively, since stress can destabilise blood sugar levels (Karlsen, Idsoe, Hanestad, Murberg & Bru, 2004; McDougal, 2002; Williams, 1999). There has been a growing recognition of the psychosocial factors that are associated with diabetic control such as the family, the management of stress; and the family’s access to sources of support (Seppanen et al., 1999; Whit et al., 1984). The family plays a significant role in the adjustment and adaptation to
a chronic illness such as Type I diabetes and many studies have focused on how adjustment and adaptation can be promoted in families (Hentinen and Kyngas, 1998; McDougal, 2002; Shapiro, 2002). However, families seldom have to deal with only one stressor at a time (in this case, Type I diabetes). Consequently there has also been a call for medical treatment that acknowledges the importance of psychosocial factors such as family dynamics, beliefs surrounding health, and availability of social support (Snoek & Skinner, 2002; Marshall et al., 2002; Nordfeldt & Ludvigsson, 1999; White et al., 1984). The next section highlights some of the psychosocial factors that could have an impact on the family’s adjustment and adaptation. Psychosocial factors such as reciprocal influence among the condition and its management, the affected child, the family and its subsystem, the school system and the wider community are discussed (DeCoster, 2001; Snoek & Skinner, 2002).

3.3.3.1 The Child Living with Type I Diabetes

The following paragraphs will focus on some of the challenges that a child living with Type I diabetes might have to cope with. The impact that Type I diabetes has on the child’s ability to complete developmental tasks as well as their emotions is discussed.

3.3.3.1.1 Developmental Tasks

According to Erikson’s theory on lifespan development (1963), there are eight related life stages, each stage with a range of challenges and tasks. The stage that is most relevant to the children of the research sample of this study is what Erikson (1963) referred to as ‘Industry versus Inferiority’. Some of the developmental tasks that are associated with middle childhood [from approximately five to 12 years] are (Louw, Van Ede, & Louw, 1998):

1. The development of fine motor skills
2. The development of cognitive skills
3. The obtainment of knowledge
4. More social participation
5. The development of self-knowledge
6. The further development of moral judgment and behaviour

Children with Type I diabetes face the same developmental tasks as other children of the same age. However, it seems that the symptoms related to diabetes and the demanding treatment regimens could make the completion of these developmental tasks more difficult. Development is an interactive process and the symptoms related to Type I diabetes could have an impact on the child’s interaction with his/her family and wider social environment (such as the school environment) [Anderson et al., 2001]. Erikson (1963) asserted that the middle childhood years are a time where the child is motivated to master skills that will be used as an adult. If the diabetic child is struggling to master developmental tasks, this child may experience feelings of inadequacy. This feeling of inadequacy could further be exacerbated by parents, who in an attempt to cope with their own feelings of stress, infantilise the child with diabetes (Tsamparli & Kounenou, 2004). Some of the other emotions that the child with diabetes might experience are discussed in the following section.

3.3.3.1.2 Emotions of a Child Living with Type I Diabetes

The diagnosis of diabetes can lead to an emotional roller coaster ride (DeCoster, 2001; Morison, Bromfield & Cameron, 2003; Seppanen et al., 1999). Some of the emotions that the diabetic child could experience include the following: denial, fear or anxiety, anger, guilt and depression (DeCoster, 2001, Snoek & Skinner, 2002). The diagnosis of diabetes is often followed by denial and could be related to the diagnosis of the diabetes or the seriousness of the illness (DeCoster, 2001; Lindsey, 1983). Ignoring dietary restrictions, not monitoring blood sugar levels, and failing to adhere to insulin regimens are often associated symptoms of denial. The treatment regimen is often perceived by the young child as punishment, which could be exacerbated when day-care workers, teachers and peers unintentionally stigmatise the child by focusing on his or her different
daily routine. Stigmatisation can have a negative effect on the child’s self-perception and inhibit the child’s development (McDougal, 2002).

These emotions are not only found after the diagnosis of the child, but could present at a later stage (Snoek & Skinner, 2002). Periods of serious mismanagement are also commonly observed in adolescents living with diabetes (Snoek & Skinner, 2002; Williams, 1999). These periods of mismanagement are often attributed to lack of family support (Lo, 1999; White et al., 1984); lack of understanding from health professionals (Lo, 1999; Seppanen et al., 1999) and chronic stress (Lo, 1999; Lowes et al., 2004; White et al., 1984). As a result, the child might lash out at family and friends, isolating him/herself from valuable systems of support (Lindsey, 1983, Seppanen et al., 1999; Williams, 1999). Although children living with diabetes have to face serious life changes that they have to adjust and adapt to, they are not the only ones that are affected by these crises. The following section focuses on some of the dynamics that are associated with families living with a child with Type I diabetes.

3.3.3.2 Challenges Faced by the Diabetic Child’s Family

The literature suggests that chronic diseases such as diabetes and the resultant disruption in health are a continual source of stress for the whole family (Marshall et al., 2002). The impact of living with a child with Type I diabetes on the family is discussed in the following section.

3.3.3.2.1 Coping with the Diagnosis

The parents of a child living with diabetes encounter various demands in the care and rearing of their child. The diagnosis of diabetes is often perceived as sudden and unexpected (Lowes et al., 2004; McDougal, 2002). A common reaction to the news of the diagnosis is disbelief and feelings of anger (DeCoster, 2001; Lindsey, 1983). The parents tend to deny the possibility of the illness or explain their child’s condition as a misdiagnosis in an attempt to maintain their image of a healthy child (Seppanen et al., 1999). The parents may feel that the diabetes is a threat to the family’s
wellbeing and that it places new demands on the family and leads to stress (Seppanen et al., 1999). Important sources of support during this time seem to be emotional support from relatives and friends in the form of, for example, empathy (Lo, 1999; Seppanen et al., 1999) and informational support from health professionals (DeCoster, 2001; Lowes et al., 2004; Seppanen et al., 1999).

3.3.3.2.2 Long-term Effects of Type I Diabetes on Family Life

As the parents adjust to the initial news of the diagnosis, they eventually realize that their child’s condition is irreversible. This could be difficult for parents to cope with and often parents search for answers due to the fact that they believe that the child’s diabetes was the result of some mistake that they made. In their active search for answers, parents seek emotional support from other parents with diabetic or chronically ill children (Seppanen et al., 1999). This support is important to the family since it adds to their knowledge of diabetes and families can share their experience of the change that diabetes made within the family system (Lowes et al., 2004; Smith, Dickerson, Saylor & Jones, 1999).

As parents learn to cope with their feelings of loss for their child’s health, they also start to learn and integrate the adaptive tasks related to the management of diabetes (Matthams, 2003; Seppanen et al., 1999). The parents may initially feel overwhelmed by the burden of care that is placed on them and feel isolated and helpless (DeCoster, 2001; Matthams, 2003). It is also difficult for parents to cope with the idea that they have to inflict painful treatment procedures on their child (Matthams, 2003). In an attempt to cope, parents make changes in the routine of the family that incorporates the treatment regimen of the child living with diabetes. These changes in routine are often seen as a loss to the family. Examples of these losses include loss in freedom, a reminder of the loss of their child’s health, a loss of their child’s independence, and a loss of spontaneity (Lowes et al., 2004; Seppanen et al., 1999). Even though the change in the family’s routine is no small task, it is an important adaptive task for the family (McDougal, 2002). It is also important in light of some of the continuous challenges related to living with a child living with diabetes.
Some of the challenges that the parents might face include the continuous prevention of physical symptoms related to diabetes; the interruption of developmental tasks in the parent-child relationship (such as increased independent behaviour); strong emotional reactions such as grief, anxiety and depressed mood from persistent hypervigilance around health; and the child’s denial of his condition. To manage the child’s denial of his disease, parents often resort to scare tactics in an attempt to ensure the child’s adherence to his treatment regimen. Scare tactics have been described as non-helpful behaviour on the family’s part (Trief et al., 2003).

To ensure better adherence, the parents might take on more responsibility for the child’s care, simultaneously acting as surrogate doctor, dietician, detective and policeman (Lindsey, 1983). Often, one parent is excessively burdened by the care of the child and research suggests that this parent is usually the mother (Charron-Prochownik & Kovacs, 2000; McDougal, 2002). The mother is particularly vulnerable to the increased demands imposed upon the parents.

In terms of distress experienced by family members, the mother plays a key role in the management of the young child’s diabetes (Charron-Prochownik & Kovacs, 2000; McDougal, 2002; Seppanen et al., 1999; Tsamparli & Kounenou, 2004). Since this extra burden of care could lead to more distress for the mother, more mutuality of care is encouraged for the diabetic child (McDougal, 2002). This is in contrast to the management of an adolescent’s diabetes, where more independent care is encouraged (Williams, 1999).

Mothers are more at risk of depression due to losses related to child bonding, marital cohesiveness, and sources of support; such as grandparents and friends who may withdraw due to fear (McDougal, 2002). To adapt, parent mutuality in the management of the diabetes is encouraged since this contributes to marital satisfaction (McDougal, 2002). Marital satisfaction in turn nourishes the family environment, thereby promoting child adaptation (Amer, 1999).

In summary, it is apparent that many factors play a role in the adaptation of the parents. Parents who adapt well are able to accept their child’s chronic condition, are able to live with it, comply with the child’s treatment regimen and are able to meet the child’s developmental tasks, their own
and those of the family (Marshal et al., 2002). The following section focuses on the impact of diabetes on the siblings of the diagnosed child. To adjust and adapt to the condition is a difficult task and often the impact of diabetes on the siblings of the diabetic child is downplayed (McDougal, 2002).

3.3.3.2.3 Siblings

The psychological impact that diabetes has on siblings cannot be denied. Although siblings of children living with diabetes do not have the condition, they have to live with some of its effects (Ferrari, 1987; McDougal, 2002). The well sibling(s) often take on the role of an additional parent for their diagnosed sibling by helping with the treatment regimen (Tsamparli & Kounenou, 2004). Due to the demanding treatment regimen of the diabetic child, the child often receives more parental attention and concern while other family members are neglected (Hentinen & Kyngas, 1998; Lowes et al., 2004). This could lead to siblings feeling that their parents place less value on their well-being and could in turn result in these siblings developing a low self-concept (Ferrari, 1987). Feelings of inequality concerning the amount of attention received from parents may lead to sibling rivalry, since the child with diabetes is often overindulged at the expense of the healthy siblings (Hentinen & Kyngas, 1998). On the other hand, the diabetic child might resent his/her siblings since they can eat food that he/she cannot and because they do not have to fear possible hospitalisations and repeated trips to the doctor (DeCoster, 2001; Lindsey, 1983). The parents of the child living with diabetes might overprotect the child and fail to set the same demands as they would for their other children. Inevitably, the child living with diabetes becomes the centre of attention. This could cause family relationships to become impaired, which in turn impairs the family’s ability to adjust and adapt (Hentinen & Kyngas, 1998).

In summary, Type I diabetes forces the family to confront a myriad of challenges that can induce psychological stress (Snoek & Skinner, 2002). In an attempt to adjust and adapt, parents can benefit from a support system that could assist with coping (McDougal, 2002). The family does not
exist in isolation and influences and is influenced by other systems such as relatives, friends, the school and health care services. These systems can act as both risk and protective factors and are discussed in the sections that are to follow.

3.3.3.3 The School Environment

School is a valuable setting for the developing child to test out socially appropriate behaviour and experience a sense of mastery when taking part in age-appropriate activities (Louw et al., 1998; McDougal, 2002). However, the school environment could pose some difficulties for the diabetic child, especially at times where the diabetic child must manage symptoms related to hypoglycemia or hyperglycemia. Due to lack of knowledge about the condition, day-care and schoolteachers might be reluctant to accept responsibility for the child in the school environment (McDougal, 2002). The child could also feel self-conscious because they have to eat snacks at regular intervals and children might not understand why the child cannot share his/her snacks. As a result, the child with diabetes might feel different from their peers and feel isolated (Lindsey, 1983).

3.3.3.4 Relatives and Friends

Social support for the family appears to be a valuable protective factor for the family (Lo, 1999; Seppanen et al., 1999). Hentinen and Kyngas (1998) suggested that social support is a powerful mediator of personal well-being and is associated with good adaptation (i.e., bonadaptation). Different types of social support for the family exist and can be divided into emotional, instrumental and informational support. Emotional support refers to the provision of trust, empathy and love (Lowes et al., 2004; Seppanen et al., 1999). Instrumental support is usually provided by health care professionals and includes helping behaviours such as time and skills (Seppanen et al., 1999), while informational support includes the provision of advice.

Though these sources of support could be of value to the family, diabetes tends to have an isolating effect on the family (Smith et al., 1999). This could be due to the fact that parents might
find it difficult to entrust the care of their child with diabetes to relatives and friends (Seppanen et al., 1999). In turn, relatives and friends might not be knowledgeable about diabetes which could make care-giving a stressful experience for them. Consequently, the family tends to go out less and as a result misses out on time away from diabetes-related responsibilities, which impairs the family’s ability to balance the challenges related to diabetes with the need to lead a ‘normal’ life (Lowes et al., 2004).

3.3.3.5 Health Care Professionals

After the diagnosis of diabetes, families have cited health care professionals as valuable sources of informational and instrumental support (Lowes et al., 2004; Seppanen et al., 1999). Health care professionals offer information regarding the medical problems related to the care of diabetes (Seppanen et al., 1999). However, adjusting and adapting to the care-giving demands of diabetes is a complex process and education alone is not sufficient for successful management of a child living with diabetes (Marshall et al., 2002). Families seem to express a need for more emotional support from relatives and health care professionals (Lowes et al., 1999).

A challenge that families might have to face is feeling disempowered by the health professional system that in an attempt to maintain good metabolic control, might disregard the psychosocial impact of the illness on the family at a time when the family might benefit from more emotional support (Marshall et al., 2002). When families struggle with adherence to treatment regimens, it is often perceived as a lack of knowledge or motivation from the child living with diabetes and/or the family. Health professionals tend to launch into technical explanations or motivate their patients through scare tactics although none of these techniques have been viewed as helpful (Lo, 1999; Trief et al., 2003). The following section focuses on more helpful behaviours that facilitate adjustment and adaptation in these families.
3.4 Coping with Challenges Related to Type I Diabetes

The challenges that the family living with diabetes has to face are numerous. Despite this, families seem to have the ability to adjust and adapt to the condition and view diabetes as a manageable condition rather than an illness (Seppanen et al., 1999). When families have access to resources for coping with stressors, it tends to enhance better metabolic control in children living with diabetes (Lo, 1999). The factors that are associated with adjustment and adaptation are discussed below.

3.4.1 Parental Mutuality

Adaptation to diabetes is facilitated through family acknowledgement of the illness, acceptance and adjustment (Karlsen et al., 2004; McDougal, 2002). More specifically, the parents’ adaptation to life with a child with diabetes has a significant impact on the rest of the family’s adaptation process (Lo, 1999; Marshall et al., 2002; Seppenan, Kyngas, & Nikkonen, 1999; Smith et al., 1999). However, a child with a chronic illness may cause strain in this relationship (Hentinen & Kyngas, 1998).

Parental adaptation is demonstrated by the sharing of roles and illness-related responsibilities (i.e., parental mutuality) [Hentinen & Kyngas, 1998]. To cope with the illness, parents need to obtain skills and knowledge about the disease (Hentinen & Kyngas, 1998). Parental mutuality in diabetes management is associated with families that are thriving and that do not view the child’s condition as a threat to marital satisfaction or the family’s future happiness (McDougal, 2002; Rehm, 2000). It implies that the parents’ attitude toward their child with diabetes does not differ from their healthy children. Children are treated equally and parents believe in their child’s ability to cope with future crises (Hentinen & Kyngas, 1998).

When both parents share the responsibilities related to care of the diabetic child (i.e., role flexibility), the burden of care on the mother is lifted. This is important since mothers of children with chronic illnesses are more prone to depression (Hentinen & Kyngas, 1998). When parents
support each other, it could create a more secure and nurturing family environment for the child, which is associated with good outcomes in the child’s adaptation to Type I diabetes (Amer, 1999; Seppanen et al., 1999). In addition to the parents’ support of each other, other protective factors have been identified that are discussed in the section to follow.

3.4.2 Additional Family Protective Factors

Other protective factors that have been found to be valuable to parents living with diabetic children include problem-solving skills and the expression of emotions (Marshall et al., 2002; Ross, Frier, Kelner & Deary, 2001). Problem solving includes a range of cognitive skills that involve identifying the problem, identifying feelings related to the problem, considering alternative solutions, choosing a solution and evaluating the outcome (Carlson, Gesten, McIver, DeClue & Malone, 1994). Hentinen and Kyngas (1998) also argued that parents’ and children’s abilities to express their feelings are important. If parents are able to identify and express their feelings, they can support their child(ren) in doing the same (Carlson et al., 1994; Hentinen & Kyngas, 1998). In summary, it appears that the family’s support of each other is an important protective factor that enables adjustment and adaptation. In terms of resources outside the family, emotional and instrumental support that could be offered by extended family and friends seem to facilitate adjustment and adaptation (Lowes et al., 2004). The importance of an instrumental support system is discussed in brief in the following section.

3.4.3 Building an Instrumental Support System

Parental adaptation is enhanced when the care-giving responsibilities for the diabetic child are supported and shared by individuals that make up an instrumental support system (Marshall et al., 2002). Competent caregivers are valuable, since they allow the child’s parents some time away from illness-related responsibilities. This freedom allows the couple to enjoy time with each other and friends, contributing to good parental adaptation (McDougal, 2002). In addition to this, it also
contributes to the healthy psychosocial development of the child living with diabetes (Williams, 1999). If the child has immediate and extended family and friends who can manage their care, the child can experience common childhood events such as staying overnight at a friend or grandparents’ home without the parents having to be immediately available (McDougal, 2002).

It might be difficult for families to entrust the care of their child to others and therefore, these individuals must demonstrate an appropriate level of knowledge and decision-making abilities (McDougal, 2002; Tsamparli & Kounenou, 2004). It is often the parents’ responsibility to educate caregivers. The education of caregivers is similar to that of the parents’ education and usually consists of an explanation of the pathophysiology of Type I diabetes, daily management as well as emergency guidelines (McDougal, 2002). Special assistance from health care professionals, such as a nurse, is sometimes needed (Marshall et al., 2002; Matthams, 2003). The availability and support of this professional may be critical to the building of confidence in family members and friends that might be fearful of taking care of the child (Lowes et al., 2004; McDougal, 2002).

The instrumental support system should be expanded to include day-care and school personnel if the child is to participate in age-appropriate activities (McDougal, 2002). As mentioned before, teachers might be reluctant to take responsibility for the care-giving of the child due to lack of knowledge. Providing education for these individuals expands the circle of caregivers and allows the parents and the child to have normal life experiences (McDougal, 2002). Another important resource that families could make use of is the support of other families affected by Type I diabetes. Not only could these families offer valuable advice regarding treatment regimens, but they could also offer timely emotional support (Smith et al., 1999). Another resilience factor that was identified by McCubbin, McCubbin, Thompson, Han and Allen (1997) is spirituality. The role of spirituality and religion in the adjustment and adaptation process is discussed in the section to follow.
3.4.4 Spirituality and Religion

In Chapter Two, brief mention was made of spirituality as an important general resiliency factor. Literature suggests an important link between spirituality and coping with chronic illness (Kaye & Raghavan, 2002; Narayanasamy, 2003; Siegel, Anderman, & Schrimshaw, 2001). Spirituality is described as personal views and behaviours that express a sense of relatedness to a transcendent dimension or something greater than the self and have the ability to empower, value and integrate the self (Kaye & Raghavan, 2002). Spirituality needs to be differentiated from the religious aspects of an individual’s life, which is also related to the adjustment and adaptation to a crisis such as chronic illness (Kaye & Raghavan, 2002).

Spirituality is a broader term and may be viewed as an umbrella term under which one finds religion. Religion is viewed as an expression of one’s spiritual perspective and refers to an external, formal system of beliefs, values, rules of conduct, and rituals (Kaye & Raghavan, 2002). Religion has also been viewed as an important factor that helps people adjust and adapt to the challenges related to a chronic illness such as Type I diabetes (Kaye and Raghavan, 2002, Siegel et al., 2001). Potential pathways in which religion may influence adjustment to illness are outlined in the following section.

3.4.4.1 Providing an Interpretive Framework or Cognitive Schema

Parents and children living with Type I diabetes often have to deal with feelings of guilt. Parents often feel that they should have noticed something sooner and children living with Type I diabetes often feel that they have been punished for something they did wrong (McDougal, 2002; Lindsey, 1983). Religious beliefs can be a valuable resource in the search for meaning in the face of adversity, such as a chronic condition (Kaye & Raghavan, 2002; Narayanasamy, 2003; Siegel et al., 2001). Perceptions of God being in control of the universe when an illness has resulted in loss of health and control within one’s life may help transcend feelings of helplessness (Kaye & Raghavan, 2002).
The search for meaning during crises is an important adaptive task. Meaning is found by the development of meaningful and acceptable explanations and interpretations for the event suffered and integrating them into a stable and adaptive schema. This in turn provides a sense of predictability, control and self-worth. Viewing adversity from a constructive perspective, such as a test of one’s faith, as part of God’s plan, or as an opportunity for spiritual growth, protects individuals against feelings of vulnerability and unpredictability (Siegel et al., 2001).

3.4.4.2 Enhancing Personal Coping Resources

The perception of control has been associated with better psychological adjustment in a variety of contexts (Siegel et al., 2001). Religion can provide a person with a sense of control in two ways. Firstly, a feeling of control is derived from the belief that everything will turn out well if one places trust and faith in God. Secondly, religion provides a range of mechanisms such as prayer, adherence to a prescribed code of behaviour or rituals by which one can seek to influence future outcomes indirectly through God (Siegel et al., 2001).

Another important coping resource that is enhanced by religion is the family’s sense of self-esteem. Chronic illness can result in the diagnosed individual and their family feeling powerless and rejected. The unconditional positive regard that those with a divine relationship feel they experience from a divine relationship may enhance feelings of self-worth (Siegel et al., 2001).

3.4.4.3 Social Support and Social Integration

Religious practices such as attendance of religious services or other involvements with religious institutions and their congregations can influence adjustment to stressful life events such as chronic illness by facilitating access to social support and enhancing social integration (Kaye & Raghavan, 2002; Naranyansamy, 2003; Siegel et al., 2001). Religious groups could offer emotional, cognitive and material support and foster the family’s perception that they are cared for and valuable. In addition to this, friendships could be formed since religious practices provide sustained contact
among individuals. An extension of a religious individual’s human attachment system is their relationship with God. Social support could be derived from the belief that God is an always reliable, available and protective attachment figure (Siegel et al., 2001).

### 3.5 Conclusion

The current chapter has highlighted some of the interrelated system dynamics related to Type I diabetes. It is apparent that while the child is the diagnosed individual, the impact of the disease has a ripple effect that extends to the child’s family and environment. Since the child is a dependant, it could be argued that if the child has to adjust and adapt to life with Type I diabetes, the family will have to do the same. This process is a difficult task since Type I diabetes is a complex and demanding condition that, if not managed effectively, could lead to serious physical complications. The medical management of diabetes is essential to manage the possibility of long-term complications, but this management could be complicated by the experience of stress in the diagnosed child and/or the child’s family. Consequently, there has also been growing recognition of the psychological impact of the condition and practitioners have been encouraged to integrate elements of the bio-medical model with psychological factors.

Although Type I diabetes can leave the family in a more vulnerable state, it seems that families are able to adjust and adapt, progressing from a life where diabetes is the main focus to a life where diabetes and its requirements are integrated into the daily routine of the family. Social support from health care professionals (i.e., instrumental support), and friends and family (i.e., emotional support) are important as the family attempts to balance the demands of Type I diabetes with their need for normalcy. The design and methodology of this study is discussed in the following chapter.
Chapter Four

Research Design and Methodology

4.1 Introduction

This chapter provides an overview of the research design and methodology that was utilised in this study. The primary aim of the study is presented. This is followed by an overview of the research methodology with a specific focus on the methodology itself, the participants and sampling procedure, the method of data gathering, the research procedure and the data analysis. The chapter is concluded with an outline of the ethical issues that the researcher considered, such as gaining informed consent from institutions and research participants, respecting the privacy of research participants, as well as minimising psychological risk and harm.

4.2 Aim of Study

The primary aim of the present study was to explore and describe the resiliency factors that facilitate adjustment and adaptation in a family with a child that has Type I diabetes.

4.3 Research Design and Methodology

Authors like Walsh (2003) have called for a combination of qualitative and quantitative research approaches in contributing to resilience research. For the purpose of this study, triangulation was employed, with an exploratory, descriptive approach.

Various methods of triangulation exist, such as triangulation of measures (Neuman, 2003; Struwig & Stead, 2001). This involves measuring the same phenomenon in multiple and different ways. Any discrepancy that is observed between these measurements then informs the research (Leedy & Ormrod, 2005). Another type of triangulation method is triangulation of observers. This implies that multiple
people are used to observe the same phenomenon in order to gain different views and thus contribute to a more holistic understanding of the phenomenon (Struwig & Stead, 2001). In addition to these types of triangulation, triangulation of theory can also be used, which entails the use of different theories to plan and interpret data. The last type of triangulation is referred to as triangulation of method which implies that qualitative methods were used in conjunction with quantitative methods (Neuman, 2003). For the purposes of this study, triangulation of method was utilised since the study made use of both quantitative and qualitative methods. An advantage of this type of triangulation is that it enables the researcher to look at a phenomenon from different perspectives and thus gain a fuller picture of what is being studied (Neuman, 2003).

Quantitative data were gathered by means of structured questionnaires, while qualitative data were obtained from an open-ended question in the biographical questionnaire. The open-ended question requested participants’ opinion on factors of strengths that they believed helped them as a family with a Type I diabetic child.

An exploratory-descriptive research design was employed for the purposes of this study. Each of the components of this research design and method is discussed below.

4.3.1 Exploratory Research

Exploratory research is typically employed to examine a new topic or issue or if the subject of study is in itself relatively new and unstudied (Neuman, 2003). Even though exploratory research might not yield definite answers, it is considered to be an essential step in research, since it creates a foundation for further research inquiry (Gravetter & Forzano, 2003; Neuman, 2003; Rosnow & Rosenthal, 1993). Although the concept of resilience has been studied extensively on an individual level, the family as a unit of analysis, with family resilience as a key variable, is a more recent trend. In addition to this; research in the South African context regarding family resilience is limited. Studies that have been conducted have focused on identifying and describing resilience factors in families in which a parent
accepted a voluntary retrenchment package (Der Kinderen & Greeff, 2003), families in which a parent has died (Greeff & Human, 2004), divorced families (Greeff & Van der Merwe, 2004) and resilience in South African and Belgian single-parent families (Greeff & Aspeling, 2004).

4.3.2 Descriptive Research

Descriptive research plays an important role in psychology as it presents a picture of the specific details (i.e., the frequency and prevalence) of a situation, social setting or relationship (De Vos, 2005; Neuman, 2003; Rosnow & Rosenthal, 1993). The purpose of a descriptive research strategy is to describe single or multiple variables (Gravetter & Forzano, 2003). In this case, resilience in families with a Type I diabetic child is explored and described.

A researcher can choose from a variety of descriptive methods (Elmes, Kantowitz & Roediger III, 2003). These include (a) observational methods (i.e., making observations in a specific natural setting or of one or more specific behaviours in a particular setting); (b) case studies (i.e., the detailed examination of an individual, organisation, or community, and so on); (c) survey research (i.e., the use of self-report measures to question people about their attitudes, behaviours and demographics); and (d) meta analysis or archival research (i.e., using already existing information to answer questions). The survey method was viewed as the most applicable data gathering technique to obtain both quantitative and qualitative data, since a biographical questionnaire and structured paper and pencil measures were utilised. The survey method is discussed in the following section.

4.3.2.1 Survey Research

A survey is the technique for gathering information by questioning individuals who are the object of the research. Survey research can be seen as an important way of collecting data to examine the frequency and relationships between sociological and psychological variables (Corbetta, 2003; Cozby, 2004; Elmes et al., 2003; Salkind, 1997; Shaughnessy et al., 2000). Survey research methods do not
suggest a link of causality between the variables that are employed in a research project. Despite this limitation, survey research is still valuable in that it can indicate if a relationship is present, and may point to the strength or direction of that relationship (Rosnow & Rosenthal, 1993). There are three distinguishable techniques for collecting survey data, namely face-to-face interviews, telephonic interviews and written questionnaires (Goodwin, 2002). In the current study, research participants were requested to complete questionnaires in an attempt to describe the family resilience factors in families with a child with Type I diabetes.

Survey research is not without risk, but according to Salkind (2003), it is relatively easy to determine the validity of survey data. Some of the advantages of survey research are that it allows the researcher to gain a broad picture of the topic under study. Data can be gathered in one sitting and minimal facilities are required. Other advantages include savings in money and time and greater privacy for the research participants. In addition to this, results can be generalised to the larger population if the correct sampling technique is used (Neuman, 2003).

Though survey research seems to have many advantages, this research method has potential challenges. Considerable time could be spent seeking participants and dealing with many of extraneous sources of variance that are difficult to control for the researcher. Examples of extraneous sources of variance include socially acceptable responses or no response at all, resulting in an insufficient response rate (Cozby, 2007; Neuman, 2003; Whitley, 2002). There are many reasons for a lower response rate such as respondents with literacy problems, low educational background or vision problems. Often people do not understand questions, or are too busy or not interested enough to complete the survey (Cozby, 2004). Low response rates inadvertently produce smaller samples than the researcher intended. Although this would be a serious concern, the size of the sample is not the most serious problem. The greatest problem is that low response rates typically suggest response bias (Shaughnessy et al., 2000). This could have serious implications as the people who do not respond might represent a qualitatively different group from those who do respond (Salkind, 2003). The
implications of this are that the findings based on those who do respond will be different than if the entire group had been considered and as a result the external validity of the study decreases (Gravetter & Forzano, 2003; Salkind, 2003; Whitley, 2002). In view of some of the limitations related to survey research, the researcher identified more families than the study intended in an attempt to manage a possible low response rate. Regular follow-ups were also done with families during which they were encouraged to complete the sets of questionnaires.

To increase the families’ level of understanding, they were provided with sufficient information about the study as well as the contact details of the researcher in the event that any questions or concerns related to the study arose. An inclusion criterion of the study was that families had to have at least a Grade 8 language proficiency in English or Afrikaans. Families were also provided with sets of questionnaires in their language of choice. By doing this, possible difficulties related to illiteracy were avoided.

From the abovementioned literature it can be concluded that it is important to be careful when designing survey research and cautious about generalising from the results (Corbetta, 2003; Neuman, 2003). The following section indicates how the sample for the study was obtained.

4.3.4 Participants and Sampling.

A critical issue related to survey research is the sample that is being surveyed (Elmes et al., 2003). The sampling procedure and the issues related to the research participants are discussed in the following section.
4.3.4.1 Sampling procedure

In the light of the aim of this study, nonprobability purposive sampling was employed. In nonprobability sampling, the probability of a person being chosen as a research participant is unknown since the researcher does not know the size or the members of the population (Gravetter & Forzano, 2003; Neuman, 2003). A limitation of this type of sampling is that the participants are not randomly selected and therefore the results of the study cannot be generalised beyond the scope of the selected group. However, nonprobability sampling is less expensive and consists of a group of people that are easily accessible to the researcher since the research was exploratory descriptive in nature, the above-mentioned limitations related to the sampling procedures were considered, but not seen as significant problems (Cozby, 2004).

In purposive sampling, the researcher uses his/her judgment to select the membership of the sample based on the specific goals of the research (Whitley, 2002). Participants are included on the basis of characteristics such as specific knowledge or experiences related to the purpose of the study (Shaughnessy et al., 2000). In this type of sampling, the chances of selection bias are high and therefore the results of the study cannot be generalized to the population. Advantages include the fact that the researcher does not have to have a sampling frame available and the researcher can ensure that the research participants meet the inclusion criteria (i.e., purposive sampling).

While purposive sampling remained the main sampling method employed, snowball sampling was used as an additional plan to purposive sampling in an attempt to identify as many research participants as possible. Snowball sampling is a procedure in which people who were initially identified as research participants recommend people who would most likely be willing to participate in the research and fit the inclusion criteria for the research objective/purpose (Whitley, 2002). By asking the nominated individuals to nominate other potential participants, the “snowball” continues until enough participants have been identified.
The discussed sampling methods were used to identify families who met the inclusion criteria for the present study. The goal was to obtain a minimum 56 families as research participants. The inclusion criteria of the study are stipulated in the section to follow:

A family was defined as two or more people that live together for the benefit and the development of each member, and the group as a whole (Greeff, 2004). The diabetic child had to form part of a family where the caregivers reside within the same house, regardless of the nature of their relationship (e.g., co-habitating, or married). According to Hentinen and Kyngas (1998), the parents’ adaptation to a child’s diabetes has a significant influence on the other family members and their well-being, and therefore the goal was to enlist the help of the two caregivers of the child living with diabetes as representatives of the family. Additional inclusion criteria were that the family had to include a child between the ages of four and 12 years who had been diagnosed with Type I diabetes for a minimum of six months. Research findings suggest that the family is most actively involved in the management of the diabetes from birth to pre-adolescence, since independent care is encouraged during adolescence (Williams, 1999). Although a Grade 10 proficiency in English or Afrikaans was recommended to understand the questionnaires, previous family resilience research projects that were published had been conducted with research participants with a Grade 8 language proficiency (Der Kinderen & Greeff, 2003; Greeff & Human, 2004; Greeff & van der Merwe, 2004).

The Port Elizabeth branch of DiabetesSA was contacted to obtain numbers of diabetes support groups in the local region. The researcher then made contact with the local Family diabetes support group and introduced them to the study during a family picnic. Since all the families could not attend the picnic, the Family diabetes support group also provided the researcher with a list of names that could be utilised for the purposes of the study. Subsequent to the picnic, families were phoned and introduced to the study. During this conversation, families were also asked if they knew of other families that would be willing to participate in the study. Some families from outside Port Elizabeth were identified in this manner. Some families outside Port Elizabeth recommended their diabetes
support group as a sampling resource. Questionnaires were mailed, e-mailed or delivered in person to families that were willing to participate. Regular reminders and follow-ups were done with the identified families from the diabetes support group in an attempt to maximise the size of the sample.

After the sample size from the Family diabetes support group was saturated, the Chief Medical Officer at a state hospital in the Nelson Mandela Metropolitan district was contacted to introduce the hospital to the study. After consent had been obtained from the Chief Medical Officer, families attending the endocrine clinic (which includes children living with Type I diabetes) were informed about the study. Those families that were willing to participate and met the inclusion criteria of the study were provided with sets of questionnaires that they had to return during their next visit to the clinic. Regular reminders and follow-ups were done with these families as well.

A total of 72 sets of questionnaires were sent out in an attempt to gain as many research participants as possible. The biographical questionnaire that the research participants completed, allowed the researcher to contextualise the research findings in relation to the results of the seven measures. A total of 20 sets of questionnaires were returned of which 16 families met the inclusion criteria of the study. Four sets of questionnaires could not be used for the purpose of this study, since the research participants did not meet one or more of the inclusion criteria of the study. An outline of the information that was provided by the research participants follows.

4.3.4.2 Research Participants

A total of 16 families from four of the provinces in South Africa participated in this study (i.e., Western Cape, Eastern Cape, Mpumalanga, and the Free State). The majority of the research participants stayed in Port Elizabeth (8 families). Since the goal of the study was to include a minimum of 56 families, families from outside the Port Elizabeth area were also identified. Many research participants were drawn from Pietermaritzburg (4 families), while an equal number of research participants were located in Stellenbosch (1 family), George (1 family), and Middelburg [Eastern Cape]
A family from Bethlehem was also involved in this study (the male caregiver). While sampling research participants from other areas allowed the researcher to gain a bigger research sample, the disadvantage of this sampling technique is selection bias. Selection bias occurs in the case when selection procedures are utilised so that a segment of the population (in this case, families living with a child with Type I diabetes between the ages of four and 12) are overrepresented or underrepresented. In this study, the majority of research participants were drawn from Port Elizabeth (8 families), as well as Pietermaritzburg (4 families).

A slight difference was found in the gender distribution of the research participants. Of the included research participants, 17 were female, while 14 were male. One of the families that took part in this study involved two female caregivers (i.e., the mother and the grandmother of the child living with Type I diabetes). The family was included since the definition of a family that was used for the purpose of this study was two or more people that live together for the benefit and the development of each member, and the group as a whole (Greeff, 2004). The ages of research participants ranged from 29 to 64. The mean age of the caregivers that participated ranged from 41.63 (participants’ age) to 41.39 (spouses’ age). In terms of marital status, the majority of the research participants (n = 26) were married, while 5 were co-habitant. The number of years that caregivers had been living with partners ranged from 1 to 25 years with an average of 15.28 years. Most of the research participants had been with their partner for more than 10 years and the mean length of relationships was 16 years.

The age of research participants’ firstborn children ranged from 4 to 25 with an average of 12.71 years and a median age of 12. The age of the second child ranged from 2 to 12 years with an average of 8.83 and a median age of 10. A limitation of this study is that research participants were not asked to indicate which one of their children has Type I diabetes.

The majority of families did not have additional people living at home with them (n = 28). Only a small number of research participants indicated that there was somebody staying with them (n = 3).
In this study, questionnaires were made available in English and Afrikaans. The sample shows a relatively even distribution of English and Afrikaans-speaking research participants. Sixteen research participants indicated English as their home language, while 13 indicated that Afrikaans was their home language. The results indicated that the education level of the research participants varied from high school to tertiary education. The majority of research participants had obtained a degree (n = 13); 11 had a high school education (Standard 8 to Standard 10, i.e., Grade 10 to Grade 12), and 5 had obtained a diploma.

One of the inclusion criteria of this study stipulated that the child should have been diagnosed with Type I diabetes for more than six months. The time since diagnosis varied from 12 months (i.e., 1 year) to 96 months (i.e., 8 years). The rationale behind this inclusion criterion is that family resilience literature (McCubbin, Thompson & McCubbin, 2001; Walsh, 2002, 2003) suggested that adjustment and adaptation involve a process that occurs over time. This is also reflected in some qualitative research on the adjustment and adaptation of families living with Type I diabetes (Lowes, Lyne, & Gregory, 2004; McDougal, 2002). Lowes et al.’s (2004) study suggested that the adjustment and adaptation process takes approximately a year. The various methods that were utilised to obtain data are discussed in the section to follow.

4.3.5 Research Measures

Various measures were used to gather data for the study. This included a biographical questionnaire with an open-ended question as well as seven brief structured paper-and-pencil questionnaires. The following structured questionnaires were employed for the purposes of this study:

1. Relative and Friend Support (RFS)
2. Social Support Index (SSI)
3. Family Crisis-Oriented Personal Evaluation Scales (F-COPES)
4. Family Hardiness Index (FHI)
5. Family Time and Routine Index (FTRI)

6. Family Problem-Solving Communication (FPSC) and the

7. Family Attachment and Changeability Index 8 (FACI8)

The FACI8’s total score can be viewed as the dependent variable, namely the extent to which the family has adapted while the other measures represent independent variables. The questionnaires were made available in English and Afrikaans and from previous studies conducted in the South African context, a Grade 8 proficiency in English or Afrikaans was considered acceptable (Der Kinderen & Greeff, 2003; Greeff & Human, 2004; Greeff & van der Merwe, 2004).

The biographical questionnaire and the seven structured questionnaires took approximately one hour to complete. Since the measures have not been standardised for the South African population, scores are in the form of raw scores as opposed to standardised scores. Although the measures have not been standardised for the South African population, they have been used in South African studies that have been published (Der Kinderen & Greeff, 2003; Greeff & Human, 2004; Greeff & van der Merwe, 2004). Furthermore, a study is currently underway at the University of Stellenbosch that is investigating the reliability, validity and the relevance of these measures for the South African population (Brown-Baatjies, 2006). During the data analysis, item analyses of the seven measures were conducted to indicate the internal reliability of the measures (in this study, a coefficient alpha). The measures that were used for the aim of this study are described in the section to follow.

4.3.5.1 Biographical Questionnaire

A brief biographical questionnaire (see Appendix C) was compiled to obtain information relevant to the study. Relevant data included the family’s composition, educational level of family members, number of children in the family, their age and gender. The biographical questionnaire was compiled with the goal of gathering important demographic and background information pertaining to research participants in order to create the context for the data from the questionnaires and the open-ended
question. The open-ended question at the end of questionnaire was stated as “What are the most important factors, or strengths, which have helped you as a family with a Type I diabetic child?” This provided the research participants with an opportunity to comment on strengths that were not listed in the other questionnaires. The additional seven questionnaires attempted to measure the components of the Resiliency Model of Family Stress, Adjustment and Adaptation as depicted in Chapter Two. An overview of these measures is provided.

4.3.5.2 Relative and Friend Support Index (RFS)

The Relative and Friend Support Index was designed by McCubbin, Larsen and Olsen to determine to what extent family members use the support of their own family and friends as a coping strategy when dealing with stressors. The instrument attempts to measure the family resources component (BB) of the Resiliency Model of Family Stress, Adjustment and Adaptation (McCubbin et al., 2001). The RFS is an 8-item instrument based on a 5-point Likert rating-scale (strongly disagree, disagree, neutral, agree, strongly agree). The internal reliability is 0.82 (Cronbach alpha) and the validity coefficient (with the original Family Crisis Oriented Personal Evaluation Scales (F-COPES) is 0.99 as indicated by McCubbin et al. (2001). The internal reliability for the RFS in this study was 0.87 (Cronbach alpha). Examples of items that participants were requested to respond to, include: “We cope with family problems by seeking advice from relatives” and “We cope with family problems by seeking information and advice from people faced with the same or similar problems”.

4.3.5.3 Social Support Index (SSI)

The Social Support Index (SSI) was developed by McCubbin, Patterson and Glynn (McCubbin et al., 2001). The SSI was used to determine the extent to which families are integrated into the community and the extent to which they perceive the community as a source of support. This questionnaire also taps into the family and community resources component of the Resiliency Model of
Family Stress, Adjustment and Adaptation. Community based social support is viewed as an important contributing factor in resilience. Sources of support include emotional support (such as recognition and affirmation), esteem support (affection) and network support (relationships with relatives) [McCubbin, McCubbin, Thompson, Han, & Allen, 1997]. Social support is viewed as an important factor in family resilience. Social support acts as a buffer against family crisis factors, promotes family recovery, and acts as a mediator of family distress (McCubbin et al., 2001).

The scale consists of 17 items based on a 5-point Likert Scale (ranging from strongly disagree, disagree, neutral, agree to strongly agree). The Social Support Index has an internal reliability of 0.82 (Cronbach alpha), a test-retest reliability of 0.83 and a validity coefficient (correlation with criterion of family well-being) of 0.40 (McCubbin et al., 2001). The internal reliability for the measure in this study was 0.78 (Cronbach alpha). Examples of items in this questionnaire include the following: “People can depend on each other in this community” and “Living in this community gives me a secure feeling”.

4.3.5.4 Family Crisis-Oriented Personal Evaluation Scales (F-COPES)

The Family Crisis-Oriented Personal Evaluation Scales (F-COPES) were used to identify the problem-solving and behaviour strategies that families could apply during crisis situations. The instrument draws on the coping dimensions of the Resiliency Model in which the following factors are integrated: pile up of demands (AA), family resources (BB) and meaning (CCC).

The F-COPES feature 30 items that focus on two levels of interaction as depicted in the Resiliency Model. Firstly, they focus on how the family handles crises and problems between family members. Secondly they focus on how the family handles external problems that have an effect on the family unity. Higher marks indicate effective positive coping behaviour. The F-COPES consist of 30, 5-point Likert-type items (strongly disagree, disagree, neutral, agree, strongly agree). The 30 items are divided into five subscales, namely (a) Acquiring social support, (b) Reframing, (c) Seeking social support, (d)
Mobilising family to acquire and accept help, and (e) Passive appraisal. The five subscales are further subdivided into internal coping strategies and external coping strategies. High scores is an indication of effective positive coping behaviour.

The F-COPES has a test-retest reliability of 0.71 and an internal reliability coefficient (Cronbach Alpha) of 0.77 for the total scale (Reis & Heppner, 1993). In this study, the internal reliability scores of the subscales were also measured, i.e., (1) Acquiring social support was 0.90 Cronbach Alpha, (2) Reframing (0.70 Cronbach Alpha), (3) Seeking social support (0.90 Cronbach Alpha), (4) Mobilising family to acquire and accept help (0.77 Cronbach Alpha); and (5) Passive appraisal (0.64 Cronbach Alpha). Examples of items that participants were requested to respond to, include: “When we face problems or difficulties in our family, we respond by attending church services” and “We have a sense of being strong even when we face big problems”.

4.3.5.5 Family Hardiness Index (FHI)

The Family Hardiness Index was developed by McCubbin, Thompson and McCubbin (2001) to measure internal strength and durability in the family unit. The measure taps into the family’s existing resources (BB) and family schemas (CCCCC), which is a dimension that is closely linked to hardiness as conceptualised in the Resiliency Model. Hardiness refers to a sense of control that the family experiences in terms of the outcomes of life events (CC) and hardships (AA) and facilitates family adjustment and adaptation over time. The family makes a commitment to work together to attack and solve the crisis and reframes and defines the hardships as challenges, rather than problems (McCubbin et al., 1997; McCubbin et al., 2001). McCubbin et al. (1997) referred to hardiness as the “steeling” quality of the family. This instrument consists of 20 items which aim to measure the characteristics of hardiness as a stress resistant and adaptational resource in families which would act as a mediating factor in mitigating the effects of stressors and demands and facilitate adjustment and adaptation over time (McCubbin et al., 2001). The instrument consists of three sub-scales (i.e., commitment, challenge
and control), which require participants to assess on a 5-point Likert scale (false, mostly false, mostly true, true, not applicable) the degree to which each statement describes their current family situation.

The internal reliability (Cronbach alpha) of the Family Hardiness Index is 0.82 and the validity coefficients range from 0.20 to 0.23 with criterion indices of family satisfaction, time routines, and flexibility (McCubbin et al., 2001). The internal reliability of the subscales for this study were (1) Challenge (0.75 Cronbach alpha), (2) Control (0.66 Cronbach alpha), and (3) Commitment (0.71 Cronbach alpha). Examples of items in this questionnaire include: “In the long run, the bad things that happen to us are balanced by the good things that happen” and “Trouble results from mistakes we make”.

4.3.5.6 Family Time and Routine Index (FTRI)

The FTRI, also developed by McCubbin, Thompson and McCubbin, assesses the type of activities and routines families use and maintain and the value they place upon these activities (McCubbin et al., 2001). These activities and routines contribute to the family’s range of new and existing resources (BB). The specific activities and routines that a family engages in offer relatively reliable indices of family integration and stability, which contribute to family resiliency. The FTRI taps into the family type (T) component of the Resiliency Model of Family Stress, Adjustment and Adaptation.

The FTRI is a 30-item instrument which can be subdivided into the following eight subscales: parent-child togetherness, couple togetherness, child routines, meals together, family time together, family chores routines, relative connection routines and family management routines. The participant assesses the degree to which each statement describes their family behaviour (false, mostly false, mostly true, true). In addition to this, the participant has to indicate the value of each routine in keeping the family strong and healthy by circling one of the following options: NI = Not Important, SI = Somewhat Important, VI = Very Important and NA = Not Applicable.
The overall internal reliability of the instrument is 0.88 (Cronbach’s alpha) and the validity was confirmed through significant correlations with various criterion indices of family strengths (McCubbin et al., 2001). In this study, the overall internal reliability of the instrument was 0.81 Cronbach alpha. Examples of items that participants were requested to respond to, include: “Family has a quiet time each evening when everyone talks or plays quietly” and “Parents have a certain hobby or sport they do together regularly”.

4.3.5.7 Family Problem Solving Communication (FPSC)

During times of normative and non-normative life events and changes, communication is important. Communication allows the family to create a shared sense of meaning, develop and employ coping strategies, and maintain harmony and balance (McCubbin et al., 1997). The FPSC, developed by McCubbin et al. (2001), measures two dominant patterns of communication (i.e., positive and negative) which families use in dealing with stressful situations. The FPSC was essentially developed for research into family stress and resiliency with the goal of measuring the problem-solving and coping component (PSC) of the Resiliency Model. It is assumed that the quality of communication indicates to what extent family functioning, adjustment and adaptation are experienced as satisfactory. The 10-item instrument that uses a 4-point scale (false, mostly false, mostly true, true) can be divided into two scales that represent the two dominant forms of communication, namely incendiary and affirming communication. Incendiary communication refers to types of communication that exacerbate stressful situations such as yelling and screaming, while affirming communication describes supportive, caring and calming types of communication. Family systems that emphasise affirmation as the prominent pattern of communication increase their potential for recovery and minimise the family’s risk for dysfunction.

The internal reliability for the whole measure is 0.78 (Cronbach alpha), while the test-retest reliability is reported to be 0.86. The overall internal reliability for the FPSC in this study was 0.70,
while the internal reliability of the subscales was 0.73 (Cronbach alpha) for Affirming communication and 0.74 (Cronbach alpha) for Incendiary communication. The validity of the FPSC is supported by multiple studies done by McCubbin et al. (2001), including studies of ethnic families. Examples of items in this questionnaire include: “We are respectful of each others’ feelings” and “We yell and scream at each other”.

4.3.5.8 Family Attachment and Changeability Index 8 (FACI8)

The FACI8 was adapted from the Family Adaptability and Cohesion Evaluation Scales (Olson, Portner & Bell, 1989) by McCubbin, Thompson and Elver (McCubbin, Thompson & McCubbin, 2001) as a measure of family functioning. The goal was to develop a questionnaire that would be applicable to both Caucasian and African-American youths and be ethnically sensitive. In this study the Family Attachment and Changeability Index 8 was used to determine the level of family adaptation (XX). The 16-item instrument measures the family’s level of Attachment (cohesion) and Changeability on a 5-point Likert scale (never, sometimes, half the time, more than half, always). The abovementioned constructs are represented in two subscales. Attachment is an 8-item scale that measures the strength of the family’s attachment, while Changeability (8-item scale) measures how flexible family members are in their relationships with each other.

The internal reliability (Cronbach alpha) for the subscales varies between 0.75 and 0.80. Validity was established by determining the FACI8’s relationship to a treatment programme’s successful outcome (McCubbin et al., 2001). In this study the internal reliability of the subscales was 0.66 (Cronbach alpha) for Attachment, while Changeability had a Cronbach alpha of 0.82. Examples of items from this questionnaire include: “In our family it is easy for everyone to express his/her opinion” and “When problems arise, we compromise”. The aforementioned section provided a brief overview of the questionnaires that were used in the present study. The research procedure that was followed in the study is discussed in the section to follow.
4.4 Research Procedure

Researchers always have to consider the well-being of their participants (Babbie, 1990). Ethical procedures include voluntary participation, informed consent and confidentiality/anonymity. In view of the requirements of ethical research procedures, a copy of the research proposal for this study was submitted to the Ethics Committee (Human) of the Nelson Mandela Metropolitan University to obtain permission before the research project was initiated. After permission was granted, the local branch of DiabetesSA was contacted to gain access to possible sampling resources. The primary source for sampling in the Port Elizabeth area was the Family diabetes support group. The initial contact with the Family diabetes support group was during a family picnic. The families that were present at the picnic were informed of the purpose of the study, the value of the study as well as issues related to confidentiality and anonymity. Families that were willing to participate were provided with a set of questionnaires (one for each caregiver). The questionnaire set included an introductory letter (Appendix B) to inform them of the purpose of the study, who the researcher was, the issues of confidentiality and anonymity and a contact number should any questions arise. A pre-designed consent form (Appendix A) to confirm the agreement to participate was also included. The informed consent form also provided research participants with the researcher’s telephone number which they could use if they had any questions related to the study.

Since not all families that were members of the support group attended the picnic, the facilitators of the support group provided the researcher with a list of names that could be utilised for the purposes of the study. The researcher and the facilitators of the Family diabetes support group discussed the importance of the families’ privacy as well as confidentiality. The researcher also discussed the content of the telephonic conversation with the group facilitators. After the picnic, the rest of the families that were part of the diabetes support group were contacted. Nineteen of the families that were contacted met the inclusion criteria and were willing to participate. Sets of questionnaires in the families’ preferred language (English or Afrikaans) were mailed or emailed to families.
Since the goal of the study was to include 56 families and the appropriate number of research participants had not yet been identified, the Chief Medical officer at a state hospital in the Nelson Mandela Metropolitan district was contacted to introduce the study to the hospital. Subsequent to this, a copy of the research proposal as well as a copy of the letter of authorisation from the Ethics Committee (Human) of the Nelson Mandela Metropolitan University was submitted to the state hospital. After authorisation to do academic research had been obtained from the Chief Medical Officer, the researcher started attending the endocrine clinic on Mondays. On this day, families with children with Type I diabetes are seen for medical consultations. After families had been seen by the medical specialist, families were introduced to the study. Willing families that met the inclusion criteria were provided with sets of questionnaires in English or Afrikaans. Families were asked to either mail back the questionnaires in the envelope provided or bring back their set of questionnaires during their following visit. Since the endocrine clinic was visited on a weekly basis, this allowed the researcher to do regular follow-ups and answer research participants’ questions. In an attempt to respect patient privacy, only families that came to the endocrine clinic were introduced to the study.

A valuable sampling tool in this research project was snowball sampling. Each family that was contacted was asked if they knew of other families that met the inclusion criteria of the study and would be willing to take part. In this manner, families from outside the Port Elizabeth area were identified. Some of the families that were identified through snowball sampling were leaders of family diabetes support groups in their area and were willing to introduce their support groups to the study. In an attempt to increase the families’ response rate, regular follow-ups were done with families to encourage them to complete the questionnaires and answer any questions related to the present study. Since one of the disadvantages of survey research is a low response rate, the researcher did regular telephonic follow-ups with families. This also gave families the opportunity to ask questions and inform the researcher if they wanted to withdraw from the study. A total of 72 sets of questionnaires were sent out and 20 sets were returned. Four of the completed sets did not meet the stipulated criteria
and was therefore not included in the data analysis procedure. The questionnaires were scored and rechecked by another independent researcher.

4.5 Data Analysis

Data were analysed in terms of the aim of the study. Two types of data had to be analysed, namely quantitative and qualitative data.

4.5.1 Quantitative Data

Biographical information was analysed using descriptive statistics. The quantitative data obtained were manipulated using correlation and regression analyses. The FACI8 represented the dependent variable, while all the other measures, including the biographical questionnaire were viewed as independent variables.

Pearson product-moment correlations were calculated to determine the relationship between the research participant’s level of family adaptation and potential resiliency variables. The value of \( r \) gives information about the strength and direction of the relationship between two variables, which permits prediction (Elmes et al., 2003; Harris, 1998; Rosnow & Rosenthal, 1993). This value ranges between –1.00 to +1.00, with zero indicating no relationship at all (Cozby, 2007; Spata, 2003). The stronger the relationship, the higher the numerical value of the Pearson \( r \), regardless of the positive or negative sign (Spata, 2003). The sign of the Pearson \( r \) indicates the type of relationship that exists between the variables. A positive correlation suggests that an increase in one value is associated with a corresponding increase in the value of the other variable. The opposite applies for negative correlations: a decrease in the value of one variable is associated with a corresponding increase in the value of the other variable (Spata, 2003). A limitation of Pearson product-moment correlations is that a link of causality cannot be established (Cozby, 2004; Spata, 2003). Although no inferences regarding causality can be made, the significance of relationships between variables can be determined.
To assess this significance, $p$ values were employed. Harris (2003) states that most psychological reports make use of a $p$ value of 0.05 to assess the significance of a correlation. Although correlation that reaches a $p$ value of 0.05 is considered to be significant, an $r$ that reaches a $p$ value of 0.1 or 0.001 is considered to illustrate a more stringent and rigorous significance level (Harris, 2003). With regard to the interpretation of the significance of relationships, the well-established guidelines of Guilford (1946) were used to interpret the magnitude of the relationship between variables. These guidelines are as follows:

- Less than 0.20 slight; almost negligible relationship
- 0.20 – 0.40 low correlation; definite but small relationship
- 0.40 – 0.70 moderate correlation; substantial relationship
- 0.70 – 0.90 high correlation; marked relationship
- 0.90 – 1.00 very high correlation; very dependable relationship

In addition to calculating Pearson product-moment correlations and determining significant relationships between variables, a regression analysis was conducted. Correlation and regression are closely related (Harris, 1998; Dunn, 2001). If there is a significant correlation between two variables, it is possible to predict the score on one from the score on the other (Harris, 1998). Regression analysis was used to discover whether a combination of independent variables could predict scores on the dependent variable. The motivation behind this procedure was that an independent variable on its own may not correlate significantly with the dependent variable. However, when combined with other independent variables, this combination may predict the dependent variable.
4.5.2 Qualitative Data

The qualitative data were analysed by doing a thematic content analysis as proposed by Tesch (1990). A content analysis involves a technique by which the researcher can make inferences from messages from written communications by objectively identifying specific themes in these messages (Shaughnessy et al., 2000). Data analysis occurred up to the point that saturation occurred. The eight steps in Tesch’s (1990) model are as follows:

1. The researcher should gain a sense of the gestalt of the data. As the data came in the researcher read the material so as to gain an understanding and to formulate ideas around the data.

2. After this, the next step was to pick any data document to start with and identify topics from the material and capture them in writing. The ultimate goal was to determine what the document was about and what the underlying meaning was. The procedure was repeated for all data documents that met the inclusion criteria of the study.

3. During the third step, the researcher made a list of all the topics and themes from the data documents that were studied. A column was made for each data document and put on the same page so that similar topics could be compared and connected (Tesch, 1990). Lines were drawn between the topics and these topics were documented on a separate piece of paper.

4. The researcher then chose the most relevant name for the cluster of topics derived from the second sheet of paper. Using a third piece of paper, a new list that contained two to three columns was made. The major topics were recorded in the first column, unique topics were recorded in the second column and the third column reflected the topics that were not relevant to the study.

5. Once the themes were identified, the researcher returned to the data where the themes were abbreviated into codes and written next to the relevant sections in the text. The value of this phase is that it allows the researcher to detect new themes and codes that could be integrated into the text.
6. The researcher named the themes in descriptive wording and then created categories. From the lists of categories, themes were related to one another. By grouping related themes, the overall list of themes was reduced. Once the researcher had made a final decision of the abbreviation that represents each category, it was alphabetised.

7. Related data were assembled in one place and a preliminary analysis was done. The goal of this procedure was to identify and summarise the content of each category so as to identify information that was relevant to the present study.

After close investigation, the researcher concluded that the categories were inclusive or exclusive enough.

Guba’s Model of Trustworthiness (1985) was used to account for the researcher’s bias and subjectivity. Guba’s Model of Trustworthiness is valuable as it enables the researcher to determine the internal and external validity, reliability and objectivity of the qualitative data. The model includes four constructs, namely credibility, transferability, dependability and conformability (Guba & Lincoln, 1985). These constructs are similar to the more conventional terms of the positivist paradigm, namely internal and external validity, reliability and objectivity. A brief explanation of these constructs will now be provided (De Vos, 2005).

Credibility is the alternative to internal validity, in which the goal is to demonstrate that the study was conducted in a manner that ensures that the research participant was identified and described in an accurate way. A researcher should ensure that he/she places adequate parameters around a study. This implies an in-depth description, showing the complexities of variables and interactions. This will increase the probability that data gathered from the setting are valid.

Transferability, as a criterion of trustworthiness, was not considered for the purposes of this study, since it refers to the degree to which the findings can be transferred to the context outside the study. The present study is exploratory-descriptive in nature and therefore the ultimate goal is not to generalise the findings to larger populations.
Dependability is viewed as the alternative to reliability. With reliability, the researcher attempts to account for dynamics surrounding the research subject, such as changing conditions as well as changes in the design as the researcher gains a more refined understanding of the setting. The literature (Guba & Lincoln, 1985; De Vos, 2005) suggests a change from the positivist assumptions surrounding reliability, where it is assumed that we live in an unchanging social world where results can easily be replicated. However, these assumptions are in contrast to the qualitative/interpretive view that the world is dynamic and that replication of results is problematic.

Conformability represents the last of the four constructs that were proposed by Guba and Lincoln (1985). Conformability captures the traditional concept of objectivity. Guba and Lincoln (1985) stressed the fact that others should be able to confirm the findings of a study. The goal is to remove the subjective influence of some of the characteristics that are inherent to the researcher and rather focus on the data themselves (De Vos, 2005).

In addition, an independent coder was employed in an attempt to counter potential researcher bias. Now that the data analysis has been described, the ethical considerations that were taken into account are discussed in the section that follows.

4.6 Ethical Considerations

Researchers always have to consider the dignity and welfare of their participants (Babbie, 1990; Spata, 2003). Therefore a copy of the research proposal was submitted to the Ethics Committee (Human) of the Nelson Mandela Metropolitan University to obtain permission for the proposed study. Ethical procedures that were considered by the researcher included voluntary participation, informed consent and concerns related to the confidentiality/anonymity of research participants. In addition to this, research participants were treated with courtesy, dignity and respect, actions that are highlighted by Dunn (1999) and Huysamen (1994) as ethical research procedures.
4.6.1 Informed Consent and Voluntary Participation

Informed consent provides research participants with sufficient information to judge for themselves if they want to be part of the intended study (Elmes et al., 2003; Foxcroft & Roodt, 2001). Possible research participants were introduced to the study by an introductory letter that was also sent out to the local branch of DiabetesSA, and the local support group for families with children living with diabetes. The local Family support group for diabetes also included this introductory letter with their invitation to the family picnic. This letter provided a brief outline of the purpose of the study, who the researcher was, the issues of confidentiality and anonymity, and a contact number should any questions arise. Once possible research participants expressed an interest in the study, they were provided with a pre-designed consent form to confirm the agreement to participate. This letter was similar to the introductory letter, but differed in that the letter was addressed to “Dear Research Participant”. The researcher respected individuals’ freedom to decline to participate or withdraw from the research at any time.

4.6.2 Privacy and Confidentiality

A risk inherent in research is the loss of expected privacy and confidentiality. The loss of privacy can be described as any question related to intimate or personal matters that are not usually discussed in public and could trigger feelings of anxiety, guilt or shame (Huysamen, 1994). In order to respect possible institutions’ right to refuse to participate, the different institutions were sent an e-mail before telephonic contact was made. After the institutions replied to the e-mail, they were contacted by telephone if they did volunteer their help. Possible research participants’ right to privacy was also a concern to the researcher and therefore, once institutions gave their consent to participate, the relevant facilities were asked to either phone possible research participants or provide contact details of possible research participants. Though the study could therefore not provide anonymity to research participants,
confidentiality was ensured since the collected data were only used for the purposes of the study and were not revealed to others (Cozby, 2004).

4.6.3 Minimising Psychological Risk and Harm

The researcher has an ethical responsibility to minimise and protect participants from any physical or psychological harm that might be incurred during participation in a study (Strydom, 1998, Leedy & Ormrod, 2005). The current study was considered to be of minimal risk since the study explored activities that are a part of the daily life of the research participants (i.e., their adjustment and adaptation to life with a child living with Type I diabetes) [Shaughnessy et al., 2000]. While the risks related to participation in the study were considered to be minimal, the researcher put some safeguards in place. Should the participants have felt any discomfort while completing the different measures, they had the option of contacting the researcher. Participants were also informed that they could withdraw at any time should they have had any doubts. The researcher also ensured that she had access to some resources to which she could refer research participants if they requested assistance. This included a counselling resource at the Nelson Mandela Metropolitan University, the local branch of DiabetesSA, as well as the local Diabetes support group for families.

4.6.4 Dissemination of Results

The sharing of knowledge obtained in the study was also felt to be of importance. The research participants were invited to give their contact details on the biographical questionnaire if they wanted to receive a brief summary report of the general findings of the study. By giving general feedback on group data, rather than individual data, research participants’ right to confidentiality was maintained (Salkind, 2003).
4.7 Conclusion

Chapter Four provided an overview of the research methodology followed in this study. The aim of the present study was best met through a combination of quantitative and qualitative research techniques (i.e., triangulation of method). Data were gathered in the form of structured questionnaires and from an open-ended question in the biographical questionnaire. Sixty-seven sets of questionnaires were sent out to families that met the inclusion criteria of the study through a combination of nonprobability purposive and snowball sampling. Despite active attempts by the researcher to increase the response rate of the study, the response rate was low. Twenty sets of questionnaires were returned of which 16 met the inclusion criteria of the study.

Quantitative data were manipulated through correlation and regression analyses, while Tesch’s approach was used to identify significant themes from qualitative data. The researcher always took ethical procedures into account in an attempt to secure the well-being of research participants. The results obtained from the statistical and content analysis are presented and discussed in the following chapter.
Chapter Five

Results and Discussion

5.1 Introduction

The results of this study are presented and discussed according to the primary aim of the study. The aim of the study was to explore and describe the resilience factors that facilitate adjustment and adaptation in a family with a child that has Type I diabetes. Chapter Five provides a description of the quantitative and qualitative results that were obtained from the seven questionnaires.

The seven questionnaires that were employed for the purposes of this study were the Relative and Friend Support (RFS), Social Support Index (SSI), the Family Crisis-Oriented Personal Evaluation Scales (F-COPES), the Family Hardiness Index (FHI), the Family Time and Routine Index (FTRI), the Family Problem-Solving Communication (FPSC), and the Family Attachment and Changeability Index 8 (FACI8). The FACI8 was viewed as the dependent variable, namely the extent to which the family has adapted, while the other seven measures represented the independent variables.

Firstly, the relationship between the dependent variable and the independent variables is discussed. Finally, the results of the open-ended question that was included in the biographical questionnaire are discussed. The following section outlines the results of the measures.

5.2 Results of the Measures

This section focuses specifically on the aim of the study, which was to explore and describe the resilience factors that facilitate adjustment and adaptation in a family with a child that has Type I diabetes. To explore and describe these resilience factors, the results of the seven measures that were completed by the caregivers of the child that has Type I diabetes, are discussed.
5.2.1 Quantitative Analysis

In this study, quantitative data were analysed through correlation analysis, as well as a best-subset regression analysis. The results of these analyses are discussed in the following section.

5.2.1.1 Correlation Analysis

Pearson product-moment correlation coefficients (Pearson $r$) were calculated to determine the interrelationship between family adaptation (as measured by the FACI8) and potential resilience factors. While a Pearson product-moment correlation does not indicate a causal or explanatory link, it does indicate relationships between variables. These correlation coefficients are presented in Table 1. To assess the significance of these correlations, $p$ values were employed. As discussed in Chapter Four, a $p$ value of 0.05 is the standard value that is used for most psychological reports, whereas a $p$ value of 0.01 or 0.001 is considered to be more significant since these $p$ values are representative of more stringent and rigorous significance levels (Harris, 1998). While $p$ values were used to indicate the significance of correlations, Guilford’s guidelines (1946) were used to interpret the magnitude of these relationships. According to these guidelines, correlations that range between 0.40 and 0.70 are considered to be moderate, indicating a fairly substantial relationship. The guidelines as proposed by Guilford are outlined as follows:

- Less than 0.20     slight; almost negligible relationship
- 0.20 – 0.40      low correlation; definite but small relationship
- 0.40 – 0.70      moderate correlation; substantial relationship
- 0.70 – 0.90      high correlation; marked relationship
- 0.90 – 1.00      very high correlation; very dependable relationship

The correlation results for the research participants are represented in Table 1 on the following page.
Table 1: Pearson Product-Moment Correlations between Adaptation (FACI8) and Potential Resilience Variables

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>CAREGIVERS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(N = 31)</td>
</tr>
<tr>
<td></td>
<td>( r )</td>
</tr>
<tr>
<td></td>
<td>( p )</td>
</tr>
<tr>
<td>Relative and Friend Support (RFS)</td>
<td></td>
</tr>
<tr>
<td>Total RFS score</td>
<td>0.219</td>
</tr>
<tr>
<td></td>
<td>0.237</td>
</tr>
<tr>
<td>Social Support Index (SSI)</td>
<td></td>
</tr>
<tr>
<td>Total SSI score</td>
<td>0.102</td>
</tr>
<tr>
<td></td>
<td>0.585</td>
</tr>
<tr>
<td>Family Crisis Oriented Personal Evaluation Scales (F-COPES)</td>
<td></td>
</tr>
<tr>
<td>Reframing</td>
<td>0.193</td>
</tr>
<tr>
<td></td>
<td>0.298</td>
</tr>
<tr>
<td>Passive appraisal</td>
<td>-0.009</td>
</tr>
<tr>
<td></td>
<td>0.960</td>
</tr>
<tr>
<td>Social support</td>
<td>0.304</td>
</tr>
<tr>
<td></td>
<td>0.096</td>
</tr>
<tr>
<td>Spiritual and religious support</td>
<td>-0.010</td>
</tr>
<tr>
<td></td>
<td>0.957</td>
</tr>
<tr>
<td>Mobilisation</td>
<td>-0.046</td>
</tr>
<tr>
<td></td>
<td>0.807</td>
</tr>
<tr>
<td>Family Hardiness Index (FHI)</td>
<td></td>
</tr>
<tr>
<td>Commitment</td>
<td>0.265</td>
</tr>
<tr>
<td></td>
<td>0.149</td>
</tr>
<tr>
<td>Challenges</td>
<td>0.534</td>
</tr>
<tr>
<td></td>
<td>0.002*</td>
</tr>
<tr>
<td>Control</td>
<td>0.234</td>
</tr>
<tr>
<td></td>
<td>0.205</td>
</tr>
<tr>
<td>Total FHI score</td>
<td>0.537</td>
</tr>
<tr>
<td></td>
<td>0.002*</td>
</tr>
<tr>
<td>Family Time and Routine Index (FTRI)</td>
<td></td>
</tr>
<tr>
<td>Behaviour total score</td>
<td>0.411</td>
</tr>
<tr>
<td></td>
<td>0.022*</td>
</tr>
</tbody>
</table>
The results indicate that for the caregivers of the child living with Type I diabetes, family adaptation (as indicated by FACI8 total scores) is associated with a variety of resilience factors as described in the measures that were utilised for the purpose of this study. These factors are discussed in the context of the literature pertaining to resilience as provided in Chapter Two, as well as the literature on diabetes mellitus provided in Chapter Three.

5.2.1.1.1 Family Hardiness (Family Hardiness Index)

The results suggest a significant positive correlation between family adaptation and family hardiness (as measured by the Family Hardiness Index: global score as well as the Challenge subscale).

Family hardiness (as measured by the global score) can be described as the “steeling” quality of the family. The measure was developed by McCubbin, Thompson and McCubbin (2001) to measure internal strength and durability in the family unit. The measure is divided into three subscales, namely commitment, challenge and control.

In terms of the measure’s applicability to the Resiliency Model of Family Stress, Adjustment and Adaptation, the measure taps into the family’s existing resources (BB) [e.g., the individual, family, and community] and family schemas (CCCCC). These dimensions are closely linked to hardiness as conceptualised in the Resiliency Model. Hardiness refers to a sense of control that the family
experiences in terms of the outcomes of life events (CC) and hardships (AA) and facilitates family adjustment and adaptation over time. The family makes a commitment to work together to attack and solve the crisis and reframes and defines the hardships as challenges, rather than problems (McCubbin, McCubbin, Thompson, Han, & Allen, 1997; McCubbin et al., 2001). Although the researcher could not find any specific literature related to hardiness in families living with Type I diabetes, the literature suggests that adjustment and adaptation is facilitated through factors that are similar to hardiness (i.e., parental mutuality) [McDougal, 2002]. Parental mutuality (i.e., working together) and reframing the crisis of the diagnosis as a challenge have been mentioned as factors associated with adaptation (McDougal, 2002).

Families also indicated a positive relationship between their ability to be innovative, and motivated to experience new things and to learn (Family Hardiness Index: Challenge subscale score) and adaptation. This could be linked to literature on Type I diabetes that suggests that parents need to obtain skills and knowledge about the disease to facilitate adjustment and adaptation (Hentinen & Kyngas, 1998).

The significant positive correlation between the FACI8 and the global score of the Family Hardiness Index (FHI) indicates that family hardiness is a resource that aids family adjustment and adaptation ($r = 0.537, p = 0.002$). In terms of the strength of the correlation, the correlation between the FHI global score and the FACI8 can be viewed as moderate. The strength of the significant correlation between the FACI8 and the FHI Challenges subscale can also be viewed as moderate ($r = 0.534, p = 0.002$). According to Guilford’s (1946) guidelines outlined in Chapter Four, a moderate correlation indicates a fairly substantial relationship. While the global score of the FHI and the Challenges subscale showed a significant positive correlation with the FACI8, the other two subscales showed a definite but small correlation with the FACI8. These subscales are Commitment, which refers to the family’s sense of internal strengths, dependability, and the ability to work together, and
Control, which is the family’s sense of being in control of family life rather than being shaped by outside events and circumstances. The score on these two subscales would have contributed to the total score of the FHI being lower, which in turn affects the magnitude of the relationship of the FHI with the FACI8.

5.2.1.1.2 Family Time and Routines (Family Time and Routine Index)

The second measure, which showed a positive correlation with the FACI8, was the Behaviour subscale of the Family Time and Routine Index. The research participants of this study indicated a moderate positive correlation between activities and routines that help the family in spending time together and creating togetherness, and adaptation.

The FTRI assesses the type of activities and routines families use and maintain (i.e., the Behaviour subscale) and the value they place upon these activities (i.e., the Value subscale) [McCubbin et al., 2001]. In terms of the Resiliency Model of Family Stress, Adjustment and Adaptation, these activities and routines contribute to the family’s range of new and existing resources (BB) and tap into the family type (T) component. The specific activities and routines that a family engages in offer relatively reliable indices of family integration and stability, which contribute to family resilience (McCubbin et al., 2001). In times of crisis, family routines and time together can help the family create a sense of predictability (McCubbin et al., 1997).

While resilience literature reiterates the importance of family time and routines, literature on Type I diabetes indicates that the challenges related to Type I diabetes lead to changes in the day-to-day life of all family members (Lowes, Lyne & Gregory, 2004; Patterson, 2002a). In order to adjust and adapt the family needs to adopt new routines and rituals to incorporate the special requirements of the chronic illness and integrate these with the old routines and rituals of the family (Patterson, 2002b).
The positive correlation between the FACI8 and the Family Time and Routine Index Behaviour subscale (FTRI) indicates that family time and routines are resources that aid family adjustment and adaptation for this sample. There is a significant moderate correlation between the FTRI Behaviour subscale and the FACI8. The magnitude of this correlation was moderate ($r = 0.411$, $p = 0.022$). While the Behaviour subscale showed a positive correlation with the FACI8, no substantial correlation was obtained for the Value subscale. This subscale measures the importance (i.e., value) of each routine in keeping the family strong and healthy. A possible explanation for the fact that there was no significant relationship obtained for the Value subscale could be related to the questionnaire. The FTRI consists of eight subscales and some of the questions contained in these subscales may not have been relevant to the research participants. The majority of research participants’ children fell in the middle child age range (i.e., from 4 to 12 years of age) and some of the questions were related to family times and routines relevant to adolescents. An example of such a statement is “Teenagers do regular household chores.” The fact that some of these statements were not applicable to some families would have lowered the scores on both the Behaviour and Value subscales and in turn affected the magnitude of the relationship for the research participants.

5.2.1.3 Communication (Family Problem-Solving Communication)

The third and final measure, which showed a correlation with the FACI8, is the Family Problem-Solving Communication (FPSC) Index. The FPSC, developed by McCubbin et al. (2001), measures two dominant patterns of communication (i.e., positive and negative) which families use in dealing with stressful situations. The measure taps into the problem-solving and coping component (PSC) of the Resiliency Model of Family Stress, Adjustment and Adaptation. The results of the measure are supported by findings of authors such as McCubbin et al. (1997) and Walsh (1998, 2002) who noted that positive communication facilitates the family’s ability to recover from a crisis. On the other hand,
forms of negative communication can aggravate a stressful situation and add to the family’s level of vulnerability (McCubbin et al., 1997; Patterson, 2002b).

Within the context of families living with a child with Type I diabetes, the importance of parental support was highlighted (Amer, 1999; Seppanen, Kyngas & Nikkonen, 1999). In addition to this, problem-solving skills were also indicated as factors that facilitate adaptation. Problem-solving includes a range of cognitive skills that involve identifying the problem, identifying feelings related to the problem, considering alternative solutions, choosing a solution and evaluating the outcome (Carlson, Gesten, McIver, DeClue & Malone, 1994).

The results of this study suggest a significant, substantial interrelationship between family adaptation and family problem-solving communication in general (as reflected by the total score) \( r = 0.620, p = 0.000 \), as well as specific types of relationships between adaptation and the two types of communication measured by the subscales. Results indicated a significant, moderate positive correlation between affirming communication and adaptation \( r = 0.731, p = 0.000 \), while a significant, low negative correlation was found between incendiary communication and adaptation \( r = -0.389, p = 0.031 \). From this it could be concluded that family communication that conveys support and understanding (i.e., affirming communication) as well as less communication that exacerbates stressful situations (i.e., incendiary communication) are resilience resources that contribute to the family’s bonadaptation.

5.2.1.2 Summary of the Correlation Results

In conclusion, three measures showed significant positive correlations with the FACI8 for the research participants. These measures were the Family Hardiness Index, the Family Time and Routine Index and the Family Problem-Solving Communication (FPSC). This suggests that family hardiness, family routines and time together, as well as more affirming and less incendiary communication are
resilience factors that facilitate adjustment and adaptation for the research participants. The remaining resilience measures, namely the Relative and Friend Support, the Social Support Index and the Family Crisis Oriented Personal Evaluation Scales did not show significant correlations with the FACI8 for the research participants. These results are in contrast to literature on resilience that indicates the importance of a social support network (McCubbin et al., 1997; McCubbin et al., 2001). Literature on families living with a child with Type I diabetes also highlights the importance of building a social support network (McDougal, 2002; Smith, Dickerson, Saylor & Jones, 1999). It is speculated that no significant correlations were obtained between the Relative and Friend Support, the Social Support Index and the Family Crisis Oriented Personal Evaluation Scales and the FACI8 since these measures primarily tap into emotional support, while literature on Type I diabetes highlights the importance of an instrumental support system (McDougal, 2002). Now that the correlations have been discussed, the results of the regression analysis are presented and explained.

5.2.2 Regression Analysis

A best-subset regression analysis was conducted for the caregivers of the child living with Type I diabetes. The motivation behind this procedure was that an independent variable on its own might not have correlated significantly with the dependent variable. However, when combined with other independent variables, this combination might have predicted the dependent variable. A limitation of the regression results is the small sample size, which may have impacted the results. The results of this regression analysis are shown in Table 2 on the following page.
Table 2 Regression Analysis for Family Adaptation (FACI8) as Dependent Variable versus Potential Resiliency Variables (N = 31):

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>B</th>
<th>p-level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family Time and Routine Index (FTRI)</td>
<td>0.092</td>
<td>0.138</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family Hardiness Index (FHI)</td>
<td>0.214</td>
<td>0.053</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family Crisis Oriented Personal Evaluation Scales (F-COPES)</td>
<td>-0.188</td>
<td>0.283</td>
</tr>
<tr>
<td>Mobilisation subscale</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family Problem-Solving Communication (FPSC)</td>
<td>0.300</td>
<td>0.041</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The identified variables explained 52.44% ($R^2 = 0.524$) of the variance of the FACI8 scores. The following variables are, according to the caregivers, best predictors for family adaptation (as measured by the FACI8):

1. Activities and routines that help the family in spending time together and creating a sense of integration (Family Time and Routine Index: Total score);
2. The ability to have a sense of control over outcomes in life by having an active orientation in adjusting and adapting to crises (Family Hardiness Index: Total score);
3. Family communication that is affirming in that it conveys support and care and less communication that would exacerbate stressful situations (i.e., incendiary communication) [Family Problem-Solving Communication: Total score].
5.3 **Qualitative Analysis**

From the 31 research participants (i.e., 16 families) that took part in the study, 30 participants responded to an open-ended question in which they were asked to report the most important factors or strengths which they felt helped their family after their child was diagnosed with Type I diabetes. These qualitative data were analysed using Tesch’s model of content analysis, and a researcher was employed as an independent coder to ensure that the process of analysis was trustworthy. The results from the analysis support existing theories and previous research on resilience (McCubbin et al., 2001; McCubbin et al., 1997), as well as research on strengths that families use to cope with the challenges related to life with a child living with Type I diabetes (Karlsen, Idsoe, Hanestad, Murberg & Bru, 2004; McDougal, 2002; Seppanen et al., 1999). Responses which implied attempts by the family to bounce back were identified. The strengths that families identified that were related to the family are reported in Table 3. Table 3 is followed by a discussion regarding the identified themes.
Table 3: Themes that emerged from the content analysis (N =30)

<table>
<thead>
<tr>
<th>RESOURCES</th>
<th>FREQUENCY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Support</td>
<td>14</td>
</tr>
<tr>
<td>• Instrumental</td>
<td>26</td>
</tr>
<tr>
<td>• Emotional</td>
<td>8</td>
</tr>
<tr>
<td>Caregivers’ Acceptance of the Condition</td>
<td>15</td>
</tr>
<tr>
<td>Spirituality and Religion</td>
<td>12</td>
</tr>
<tr>
<td>• Belief</td>
<td>(8)</td>
</tr>
<tr>
<td>• Behaviour</td>
<td>(2)</td>
</tr>
<tr>
<td>• Support</td>
<td>(2)</td>
</tr>
<tr>
<td>Obtainment of Skills and Knowledge</td>
<td>11</td>
</tr>
<tr>
<td>Supportive Family Unit</td>
<td>9</td>
</tr>
<tr>
<td>Child’s acceptance of Condition</td>
<td>8</td>
</tr>
<tr>
<td>Adherence to Treatment Regimen</td>
<td>7</td>
</tr>
<tr>
<td>Parental Mutuality</td>
<td>6</td>
</tr>
<tr>
<td>Marital Relationship</td>
<td>4</td>
</tr>
<tr>
<td>Communication</td>
<td>4</td>
</tr>
<tr>
<td>Financial Resources</td>
<td>4</td>
</tr>
<tr>
<td>Hope</td>
<td>2</td>
</tr>
<tr>
<td>Truthfulness</td>
<td>2</td>
</tr>
</tbody>
</table>
5.3.1 Social Support

Participants’ answers to the open-ended question indicated that sources of social support were a primary resource that helped families adjust and adapt to life living with Type I diabetes (n = 8). Research participants also indicated a variety of people that provided support (e.g., grandparents, health practitioners and friends) [see Chapter Two] and indicated different types of social support divided into two subthemes, namely instrumental support (n = 26) and emotional support (n = 8).

Emotional support refers to the provision of trust, empathy and love (Lowes et al., 2004; Seppanen et al., 1999), while instrumental support is usually provided by health practitioners and includes helping behaviours such as time and skills (Seppanen et al., 1999). Examples of statements were:

- “Ouma’s en Oupa’s bied baie emosionele ondersteuning.” [Grandmothers and grandfathers offer a lot of emotional support]¹ (i.e., emotional support).
- “Support from other family members.” (i.e., social support)
- “My friends are all mature and help a lot.” (i.e., social support)
- “For me personally, I have Sr. T— she helps me with medical advice and also I can relate to her. She also has a diabetic daughter.” (i.e., instrumental support).

Social support is one of the general resiliency factors identified by McCubbin et al. (1997). Social support (BBB) is important to the family since this resource can help the family give meaning to the crisis situation, develop coping strategies, and foster the family’s ability to change (McCubbin et al., 1997). In terms of families that live with Type I diabetes, literature reflects the importance of social support as a mediator of personal well-being and bonadaptation (Hentinen & Kyngas, 1998; Lo, 1999; Seppanen, Kyngas, 1998). Unfortunately, Type I diabetes tends to have an isolating effect on the family (Smith et al., 1999). Families find it difficult to entrust the care of their child to family members and friends that might not be knowledgeable about Type I diabetes.

¹ [English translation]
5.3.2 The Caregivers’ Acceptance of the Condition

Participants’ answers to the open-ended question indicated that within the boundaries of the immediate family, the parents’ acceptance of the condition was found to be the primary source that helped families adjust and adapt to living with Type I diabetes (n = 15). As part of this acceptance, research participants indicated factors such as the equal treatment of all the family members, not pitying the child, and time-out from diabetes-related activities. Examples of participants’ statements included:

- “Accepting the condition of the child.”
- “Moenie slegs op die kind fokus nie. Fokus op ander dinge, bv. kerk, stokperdjies, werk, ens.” (Do not only focus on the child. Focus on other things, e.g., church, hobbies, work, etc.) [time-out from diabetes-related activities].
- “Family felt sorry for her, but treated her as always, motivating her to take care of her blood sugar” (do not pity child).

In Chapter Three it was stated that adaptation to diabetes is facilitated through family acknowledgement of the illness, acceptance and adjustment (Karlsen et al., 2004; McDougal, 2002). More specifically, the parents’ adaptation to life with a child with diabetes has a significant impact on the rest of the family’s adaptation process (Lo, 1999; Marshall, Fleming, Gillibrand & Carter, 2002; Seppenan et al., 1999; Smith et al., 1999).

5.3.3 Spirituality and Religion (belief, behaviour, and support)

Research participants indicated that spirituality and/or religion were strength factors that contributed to adaptation (n = 12). Spirituality is an umbrella term under which one finds religion (Kaye & Raghavan, 2002) [see Chapter Three]. Some of the participants made specific reference to
aspects of religion such as religious belief, religious behaviour and the support that they received from their congregation. Examples of statements included:

- “Geloof en vasberadenheid en hoop op genesing— eendag!” [Faith and determination and hope for a cure— someday!] (i.e. belief)
- “We had a lot of prayer and that is how we got through the first month.,” “Prayer to God.” (i.e. behaviour).
- “Support from congregation.”

The family’s spirituality was a general resiliency factor that was identified by McCubbin et al., 1997. Some crises in the family’s life cycle cannot be explained by reasoning and logic alone. Families might struggle to find meaning when a young child is diagnosed with a chronic illness and could search for meaning through their spiritual beliefs and practices (McCubbin et al., 1997; Walsh, 2003). Religion could be important in that it provides families with an interpretive framework, enhances personal coping resources, and provides a source of social support that allows integration (Siegel, Anderman & Schrimshaw, 2001).

5.3.4 Obtainment of Skills and Knowledge

The next theme that research participants indicated was the obtainment of skills and knowledge related to Type I diabetes (n = 11). This information was obtained from a variety of sources. Examples of statements were:

- “Stel belang in leesstof, meer inligting en het lesings bygewoon.” [Interested in reading material, more information, and attended lectures].
- “Finding out as much as possible about the condition or disease.”
- “Keep the child up to date with new medical advances. (Also take into consideration the age of the child).”
As mentioned in Chapter Three, the management of a child living with Type I diabetes requires the application of knowledge and techniques to manage continuous physical symptoms related to Type I diabetes such as hypoglycemia and hyperglycemia (Matthams, 2003).

5.3.5 Supportive Family Unit

The next theme that research participants indicated was that a supportive family (including spouse and children) was important to the family’s adaptation (n = 9). Some made specific reference to the supportive role of the child’s siblings. Examples of statements included:

- “Saam as ‘n gesin te werk om haar te help.” [Working together as a family to help her].
- “Siblings learn to be helpful.”
- “Her diabetes is not her problem alone to deal with, but the whole family’s.”

The whole family’s involvement is important, since the family unit needs to adjust and adapt to the crisis (McCubbin et al., 2001). Literature on families living with children with Type I diabetes also highlights the importance of the family unit and the support that the members could offer each other. Reference was made to the supportive role of the parents (Seppannen et al., 1999) and the role of the sibling(s) [Tsamparli & Kounenou, 2004]. When parents support each other, it could create a more secure and nurturing family environment for the child, which is associated with good outcomes in the child’s adaptation to Type I diabetes (Amer, 1999; Seppanen et al., 1999).

5.3.6 The Child’s Acceptance of the Condition

Research participants indicated that their child’s acceptance of his/her condition was also important (n = 8). According to the Resiliency Model of Family Stress, Adjustment and Adaptation, an important resource that is available to the family is their appraisal of the stressor since it will have an impact on the family’s ability to adapt to the crisis (McCubbin et al., 2001). The child’s acceptance of the
condition is important, since the denial of Type I diabetes could lead to serious mismanagement and impair the family’s ability to adapt (Lindsey, 1983; Seppanen et al., 1999; Williams, 1999). Examples of statements included:

- “His love for life and commitment to healthy living.”
- “Die kind se aanvaarding van haar toestand.” [The child’s acceptance of her condition].
- “The child’s attitude towards her diabetes inspired me to accept the condition and to be there for her.”

5.3.7 Adherence to Treatment Regimen

Adherence to the treatment regime of the child living with Type I diabetes was also highlighted as an adaptive factor (n = 7). Research participants made specific mention of treatment rituals such as diet, exercise and the monitoring of blood glucose levels:

- “…ons hele gesin ons eet- en oefeninggewoontes aanpas.” […our whole family made adjustments in our diet and exercise routine].
- “We worked out a regime in which we stick or adhere to very rigidly.”
- “Even after 4 years, check on her sugar levels every day when she tests her blood sugar.”

Adherence to a strict treatment regime could lead to better metabolic control and therefore facilitate adjustment and adaptation (Seppanen et al., 1999). This treatment regime includes tasks to prevent fluctuations in blood sugar levels (Anderson, Loughlin, & Laffel, 2001; DeCoste, 2001). In an attempt to obtain this goal, family members simultaneously become surrogate dieticians, doctors and diabetes educators (Lindsey, 1983, Lowes et al., 2004). Incorporating this treatment regime is a challenging task that the family has to face and the literature suggests that the mother usually carries the burden of care (DeCoste, 2001).
5.3.8 Parental Mutuality

Parental mutuality was another strength factor identified by caregivers (n = 6). Examples of statements included:

- “Working together as a team.”
- “Belangstelling— van albei kante.” [Interest— from both sides]
- “Support and cooperation from my husband.”

Chapter Three provided an overview of the most important factors related to parental mutuality. Parental mutuality in diabetes management is associated with families that are thriving and that do not view the child’s condition as a threat to marital satisfaction or the family’s future happiness (McDougal, 2004; Rehm, 2000). Parental mutuality allows the burden of care to be lifted from the mother and when caregivers support each other, it creates a more secure and nurturing family environment for the child, which is associated with good outcomes in the child’s adaptation to Type I diabetes (Amer, 1999; Seppanen et al., 1999).

5.3.9 Marital Relationship

Some of the research participants also indicated the importance of their marital relationship as a factor that contributed to the family’s bonadaptation (n = 4). As one research respondent stated: “The marriage must be strong to survive the onslaughts of the extra strain that a special needs child adds.” Hentinen and Kyngas (1998) also indicated that a child with a chronic illness may cause strain in the marital relationship at a time that the parents’ support of each other is important. Other examples included:

- “Good relationship with spouse.”
- “Our marital relationship has been strengthened even through this experience.”
5.4.10 Communication (Open and Honest Communication)

Research participants also viewed open and honest communication as a strength factor that they employed to solve problems (n = 4). Examples of statements included:

- “Regular discussions on how to best handle problems related to the disease.”
- “Good communication.”
- “Having a good relationship with my husband where we can discuss problems.”

The type of communication that research participants described seems to be similar to affirming communication which is viewed as a resiliency factor by the Resiliency Model of Family Stress, Adjustment and Adaptation (McCubbin et al., 2001). It is also a general resiliency factor that was identified by McCubbin, McCubbin, Thompson, Han, and Allen (1997) and was reflected in the results of the quantitative analysis of this study.

5.3.11 Financial Resources

Research participants indicated the importance of financial resources such as a good income and medical aid benefits (n = 4). Financial stability is a resistance resource (B) that facilitates adjustment according to the Resiliency Model of Family Stress, Adjustment and Adaptation (McCubbin et al., 2001). Examples of statements were:

- “Medical aid helpful. Medicine is very expensive.”
- “Being financially OK-having access to cell-phones, cars, good food, etc.”

5.4.12 Hope

Hope was also mentioned as a strength factor of the family (n = 2). Hope, which refers to wishes or desires that the family feel confident will be fulfilled, is a vital resilience factor in the process of adaptation (McCubbin et al., 1997). It is a future-orientated belief that enables the family to see beyond
their problem-saturated present and fuels energy and efforts to rise above adversity. Examples of statements were:

- “Waiting together for the miracle cure.”
- “…hoop op genesing— eendag!” […]hope for a cure— one— day!]

5.3.13 Truthfulness

Research participants stated that truthfulness was a strength factor that facilitated adjustment and adaptation (n = 2). Examples of statements were:

- “Always talk straight to your children do not tell them nonsense. Rather the truth come from you, than some way off story from their friends.”

McCubbin et al. (1997) identified truthfulness as a general resilience factor. Obtaining truthful information seems to be vital to the family’s adaptation process, especially where the family is compelled to change patterns of functioning as well as social, psychosocial and economic situations. Truthfulness is not only important in the family system, but also to medical, social and psychological intervention programmes that inform and support families in these challenging times (Anderson et al., 2001; DeCoster, 2001; Lo, 1999).

5.4 Summary of Qualitative Results

Various themes emerged from the verbatim responses of research participants. The themes that emerged highlight the importance of resilience factors that are related to individual family members, the family as a whole, and the larger community. The most important theme that emerged was the importance of social support, such as instrumental and emotional support. Research participants also indicated the importance of their acceptance of the condition, spirituality and religion, and the obtainment of skills and knowledge.
While comparing the results from the quantitative and qualitative analysis, the researcher observed a difference in the results related to social support as a resilience factor. Although the qualitative results highlighted the importance of social support as a resilience factor, this was not supported by the quantitative results. It could be speculated that this is due to the fact that families noted how important instrumental support such as that provided by health practitioners is, rather than the emotional support that could be provided by family and friends. As the results of quantitative and qualitative analyses have been presented, the following section provides an integration of these results.

5.5 Integrating Qualitative and Quantitative Results

The value of the open-ended question was that it allowed the researcher to enrich the quantitative data provided through the biographical questionnaire and the seven structured questionnaires. As the results of the quantitative and qualitative data have been presented, certain observations were made that could be stepping-stones for future research. Firstly, some of the quantitative data were supported by the verbatim responses of the qualitative data (e.g., communication). Secondly, there were new themes that emerged in the qualitative data that were not reflected in the results of the quantitative data (i.e., spirituality). Finally, there were themes that emerged in the qualitative data that were not tapped into by the structured questionnaires, despite measures tapping into this theme (e.g., social support).

5.6 Conclusion

The results of this study in relation to the aim of the study were discussed in this chapter. Both quantitative and qualitative methods of analysis were employed, since it they suited the aim of the study and provided more descriptive information. The sample size of this study was small and therefore the results of the quantitative measures have to be interpreted with caution. The qualitative information was valuable in that it enriched the data and provided possible future research questions.
While some of the themes that emerged from the quantitative and qualitative data supported each other, some themes that emerged were contradictory (such as social support). In addition to this, new themes emerged that were not tapped into through the questionnaires.

Where possible, the results were linked to literature that was cited in the chapters on resilience and diabetes mellitus. In addition to this, results were applied to the Resiliency Model of Family Stress, Adjustment and Adaptation, which was the conceptual model utilised for the purpose of this study. Now that the results of the study have been outlined, certain conclusions can be made. The conclusions based on the results of this study, the value of the research, the limitations of the study, as well as recommendations for future research are outlined in Chapter Six.
Chapter Six

Conclusions, Limitations, and Recommendations

6.1 Introduction

The results of the current study were presented and discussed in Chapter Five. Chapter Six provides conclusions that could be drawn from these findings. This chapter begins with a summary of the main findings of the study, followed by the contributions as well as the limitations of the study. The chapter concludes with recommendations for future research endeavours.

6.2 Conclusions of the Study

In drawing conclusions based on the results of the study, the discussion will be structured according to the aim of the study. The aim of the study and the results pertaining to this aim, are discussed below.

The aim of this study was to explore and describe how aspects of family resilience are associated with the adjustment and adaptation of a family living with a child with Type I diabetes. According to the Resiliency Model of Family Stress, Adjustment and Adaptation (McCubbin & McCubbin, 2001), families are able to bounce back from adversity (i.e., resilience). In this study, the results of the measures suggested that families are able to adjust and adapt after their child has been diagnosed with Type I diabetes. In the process of adaptation and adjustment the family utilises a range of resilience factors that contribute to their bonadaptation.

The results from the structured questionnaires suggest that the most important resilience factors include the family’s ability to have a sense of control over outcomes of life by having an active orientation in adjusting to and managing stressful situations, the family’s ability to be innovative, and motivated to experience new things; activities and routines that help the family in spending time together and creating a sense of togetherness; and family communication that conveys care and
support (i.e., affirming) as well as less incendiary communication that tends to exacerbate stressful situations.

The results of the qualitative analysis enriched the data and contributed towards helping the researcher identify, explore and describe, from the view of the research participants, which resilience factors aided their adjustment and adaptation process. Through the content analysis, 13 themes were identified. The resilience factors that were identified by the research participants reflect those that were related to individual family members, the family as whole, as well as the community. This is consistent with the findings of Cohler (1987) that linked the emergence of resilience to three interrelated domains, namely, the individual, the family and the larger context (Cohler, 1987).

The themes that were identified through the open-ended question suggest that the most important resilience factors include social support, the caregivers’ acceptance of the child’s condition, spirituality and religion, the obtainment of skills and knowledge, and a supportive family unit (i.e., working together as a team). Other themes that emerged were: the child’s acceptance of the condition, adherence to a treatment regime, parental mutuality, a good marital relationship, communication, financial resources, hope, and truthfulness.

While families reported social support as an important resilience factor, this was not reflected in the results of the measures that tap into this resilience factor (i.e., the Social Support Index, and the Relative and Friend Support). It was speculated that this could be due to the fact that the majority of research participants specified the importance of instrumental support, while the SSI and the RFS focus on social support in general and the ability of the family to reach out to sources of support such as family, friends and the community. The speculation was also based on the fact that Type I diabetes tends to have an isolating effect on the family (Smith, Dickerson, Saylor & Jones, 1999). Families find it difficult to entrust the care of their child to family members and friends that might not be knowledgeable about Type I diabetes. It is hypothesised that families might feel more comfortable reaching out to sources of support that are more knowledgeable about their child’s
condition (e.g., health practitioners, support groups). Now that the conclusions based on the results of the study have been discussed, it is important to discuss the value of the research.

6.3 Value of the Research

The current study contributes to the body of research within the salutogenic paradigm, which focuses on strengths rather than deficiencies. In addition to this, the study adds to the growing body of research on family resilience in the South African context. The focus in the study was on Type I diabetes as a crisis that the family had to face. By using resilience related concepts such as ‘adjusting’ and ‘adapting’, ‘protective factors’, and so on, the reparative potential of the family was highlighted rather than viewing the family as damaged.

In addition to this, the current study is the first in the South African context to examine the adjustment and adaptation process of families with a child living with Type I diabetes (i.e., a chronic condition) and therefore also contributes to the field of health psychology research. Other studies have explored family resilience in the face of crises such as families in which a parent accepted a voluntary retrenchment package (Der Kinderen & Greeff, 2003), families in which a parent has died (Greeff & Human, 2004), divorced families (Greeff & Van der Merwe, 2004) as well as single-parent families (Greeff & Aspeling, 2004; Greeff & Ritman, 2005). The qualitative component of this study can also be viewed as strength of the study. The open-ended question allowed research participants to communicate their experiences and strengths as a result of being part of a family living with a child with Type I diabetes.

The study contributes to the Clinical Health Psychology discipline by viewing Type I diabetes as a manageable condition that the family can adjust and adapt to. This is consistent with the work of authors such as Lindsey (1996) that called for a view of health within illness. This author proposed that health and illness should not be viewed as two separate entities, but rather as entities that are present in varying forms at different times. By exploring the resilience factors related to families living with Type I diabetes, the capacity of families to master adversity was highlighted.
By studying families living with a child with Type I diabetes, the researcher hopes to have contributed by affirming these families’ effective functioning, which in turn, could add to their resilience. Furthermore, the results did not only identify resilience factors, but also factors that could make the family more vulnerable (e.g., incendiary communication). The identified variables are valuable in that they could be used as a map to guide prevention and intervention efforts (Walsh, 2002). This could be used to help families cope with the stress related to Type I diabetes. This is important since research findings suggest that stress could have a negative impact on the metabolic control of the child (McDougal, 2002; Tubiana-Rufi, Moret, Czernichow & Chwalow, 1998; White, Kolman, Wexler, Polin & Winter, 1984). One example of how families could be supported in their adjustment and adaptation process is by linking families to sources of instrumental support such as Diabetes support groups (which the researcher did during the data collection) and encouraging affirming communication.

While this study is valuable to research within a variety of paradigms in psychology, there are also limitations to this study that have to be mentioned. A discussion of these limitations follows.

6.4 Limitations of the Study

There are many limitations to this study. One of the limitations related to the methodology of the study is the exploratory nature of the study. This type of research implies studying a new and unstudied area of interest in the hope of formulating future research questions (Neuman, 2003). The concept of family resilience is new and relatively unstudied in the South African context and therefore an exploratory methodology suited the aim of the study. However, this meant that the researcher did not have access to many studies on family resilience in the South African context from which to draw as a resource.

Another limitation of this study was that non-probability sampling was used in order to collect data. Although the primary advantage of this sampling technique was that it was convenient for the
researcher, the results of the study are not representative of the general population of families living with a child with Type I diabetes.

Another reason why the findings cannot be generalised is related to the size of the sample. Since a low response rate is a possible limitation of survey research, the researcher sent out 134 questionnaires (i.e., 72 sets). Despite consistent follow-ups with research participants, only 20 families responded of whom 16 met the inclusion criteria of the study. As a result, the study’s sample presented only a small sector of the diverse population of families living with Type I diabetes. The size of the sample is important, since an inappropriately low sample size is likely to produce nonsignificant findings (Cozby, 2007). It also contributes to the questionability of the results of the regression analysis. It is speculated that the low response rate was due to the number of questionnaires that the research participants had to complete. The research participants complained that there were too many questionnaires to complete. Another limitation pertaining to this matter is the fact that the researcher was not present while the questionnaires were completed. This could possibly have motivated research participants to complete the questionnaires in a shorter time and allowed them to ask questions related to the questionnaires.

In terms of the measures that were utilised, the following were found to be limitations to the study. A possible limitation arises from the language in which questionnaires were made available. The consent form was available in English only. As a result of this, research participants had to be conversant with English as a first or second language. Although the researcher ensured that all the participants were able to use English, this could possibly be viewed as a limitation of the study since such a requirement excludes participants that are not conversant with the English language on a first or second language basis.

Another limitation of this research links specifically to the measures that were used in order to collect the data. The biographical questionnaire could have asked the research participants to indicate which of their children had Type I diabetes. This could have enriched the data since findings from a study conducted by Williams (1999) suggested that the children’s age has an
important impact on their and their family’s ability to adjust and adapt to life with Type I diabetes. A limitation related to the Family Time and Routine Index (FTRI) is the nature of some of the questions. One of the inclusion criteria of the study was to include families living with a child with Type I diabetes between the ages of four and 12. Some of the questions tapped into activities that were related specifically to activities of adolescents and parents, which may not have been applicable to this sample. In terms of questionnaires that tapped into social support as a resilience factor (i.e., the RFS and the SSI), it is speculated that some of the statements were not applicable to the research participants which would inevitably have had an impact on the results of these measures. The questionnaires have also not been standardised for the South African context. A study is currently underway at the University of Stellenbosch that is investigating the reliability, validity and the relevance of these measures for the South African population (Brown-Baatjies, 2006).

Authors such as Walsh (2002) have called for longitudinal family resilience research since resilience could be viewed as a process that occurs and changes over time. Although this type of research is recommended, conducting this type of research was not possible, as it was not part of the aim of this study. In line with the aim of the study, a single measurement of the families’ adjustment and adaptation was obtained and the measures were not re-administered.

In terms of the analysis of the data, it is important to note that the low response rate had a significant impact on the significance of the results. In addition to this, no causal relationship could be deduced from the results of the study due to the correlational nature of the analyses, even though a relationship between some resilience factors and the family’s adaptation was established. While no significant difference could be found in the mean scores of male and female caregivers’ FACI8 total scores, it would have been valuable to explore if there were possible differences in terms of the caregivers’ use of different resilience resources.

Despite the various limitations of this study, recommendations for future research are offered. A discussion of these recommendations follows.
6.5 Recommendations

In view of the low response rate of this study, the following is suggested. Firstly, it is recommended that future researchers make use of a larger and more representative sample so that the results could be made more applicable to larger populations of families living with Type I diabetes. Most of the literature cited in this study originates from international sources. This supports the researcher’s recommendation for future research on families living with Type I diabetes in the South African context.

In order to manage the possibility of a low response rate, it is suggested that families be interviewed on occasions such as Diabetes support group meetings. If the researcher is not able to attend the support group meetings, it is recommended that the researcher employ the help of the group leaders and orientate them to the criteria of the study as well as the instructions for the questionnaires. This could motivate research participants to complete the questionnaires and the researcher is assured of data within a short time period. It is also recommended that families be offered some form of incentive such as money. This is suggested since pharmaceutical companies often employ the help of families living with Type I diabetes and offer them some form of incentive for their time and input.

The findings of the quantitative results did not reflect a significant positive correlation between social support and adjustment and adaptation, while the responses to the open-ended question revealed the opposite. It would be interesting to investigate whether the same results were obtained if the study were replicated with a larger sample. Another recommendation would be to involve the siblings of children living with Type I diabetes as research participants since they also have to adjust and adapt to life with Type I diabetes and also face many challenges (Ferrari, 1987). It is also recommended that the caregivers’ scores on the individual measures be compared to explore and identify differences in terms of utilised resilience factors. In the light of the feedback that some of the research participants provided, it is also recommended that fewer questionnaires are utilised.
Another recommendation for future research would be to include a longitudinal component. This is suggested since authors such as DeHaan, Hawley and Deal (2002) have proposed that resilience is best observed over time. Walsh (2002) has also indicated that resilience is a process, rather than a single event. It is suggested that three measurements of resilience be obtained: (a) at the time of diagnosis, (b) six months after the diagnosis, and (c) 12 months after the diagnosis.

This study can also be used as a stepping-stone for research related to Clinical Health Psychology. It is suggested that more studies be conducted with a focus on resilience in families that live with chronic medical conditions. This could be valuable not only to the families, but also health practitioners that often treat a variety of conditions. This research could highlight possible differences and/or similarities in strength factors that families utilise in their attempt to adjust and adapt to a chronic condition.

6.6 Conclusion

This study aimed to explore and describe the resiliency factors that facilitate adjustment and adaptation in a family with a child that has Type I diabetes. With this aim in mind, the researcher made use of the Resiliency Model of Family Stress, Adjustment and Adaptation (McCubbin, & McCubbin, 2001) to provide a framework for the interpretation of the results. Results were obtained through a combination of quantitative and qualitative measures. Although it is important to acknowledge the limitations of this study, the contributions made by this study cannot be overlooked. The resilience factors that were identified as well as the factors that could contribute to a family’s level of vulnerability offered important information regarding the sample under investigation. The study could also provide guidance for future research on the adjustment and adaptation process of families living with a child with a chronic condition.
References


Human, B. (2001). *Resilience in families in which a parent has died*. Unpublished assignment, Stellenbosch University, Stellenbosch, South Africa.


APPENDICES
Appendix A:

Covering Letter to Research Participants
Dear Research Participant

As part of my coursework for the Master’s degree in Clinical Psychology, I am required to complete a research treatise. The title of my treatise is: “Resilience in families with a Type I diabetic child”. When a child is diagnosed with Type I diabetes, family involvement seems to be of great importance leading to adjustments for the whole family. In truth, while the child with diabetes is the diagnosed patient, the family has diabetes. The aim of the research is to explore and describe the factors and qualities that help families to “bounce back” (i.e. resilience) after a child is diagnosed with Type I diabetes. It is with this goal in mind that I would like to enlist your families’ help.

If you and your life partner decide to participate in this research you will receive an envelope with a number on it. In the envelope you will find 2 sets of questionnaires, one for you and one for your partner. It is important that both caregivers complete the questionnaires. A number will appear on each questionnaire and will enable the researcher to keep track of the questionnaires to ensure that all your information remains together. In the envelope you will find a consent form, a biographical questionnaire in addition to seven other brief questionnaires pertaining to your adjustment and adaptation as a family with a child living with Type I diabetes. The researcher will provide instructions for completing the questionnaires. The questionnaires will take approximately 1 hour to complete.

You will be required to complete and sign a consent form and provide your surname and initials. If you so wish, the researcher will gladly provide general feedback. Please indicate if you would like to receive general feedback by completing the relevant section in the biographical questionnaire. All responses to the questionnaires will be regarded as confidential. For this reason you are requested to answer the questions as honestly as possible.

It will take approximately one hour to complete all the questionnaires. It is essential that you complete all the questionnaires to enable all the data to be used in the research. Once you have completed all the questionnaires, you are requested to place these questionnaires in the envelope and hand it back to the researcher.

Your participation is appreciated.

Kind regards
Ms Mariska Coetzee
Researcher

Ms Ottilia Brown-Baatjies
Supervisor
Nelson Mandela Metropolitan University

Dr Paul Fouché
Co-Supervisor
Nelson Mandela Metropolitan University

Prof Mark B. Watson
Head of Department - Psychology
Appendix B:

Consent Form
Title of the research project | “Resilience in families with a Type I diabetic child”
--- | ---
Reference number | 
Principal investigator | Ms Mariska Coetzee
Address | NMMU Department of Psychology PO Box 77000 6031
Postal Code | 
Contact telephone number | 084 657 2697

A. DECLARATION BY OR ON BEHALF OF PARTICIPANT
(Person legally competent to give consent on behalf of the participant)

<table>
<thead>
<tr>
<th>I, the participant and the undersigned</th>
<th>(full names)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.D. number</td>
<td></td>
</tr>
<tr>
<td>OR</td>
<td></td>
</tr>
<tr>
<td>I, in my capacity as</td>
<td></td>
</tr>
<tr>
<td>of the participant</td>
<td></td>
</tr>
<tr>
<td>I.D. number</td>
<td></td>
</tr>
<tr>
<td>Address (of participant)</td>
<td></td>
</tr>
</tbody>
</table>

1. I, the participant, was invited to participate in the above-mentioned research project that is being undertaken by Ms Mariska Coetzee of the Department of Psychology in the Faculty of Health Sciences of the Nelson Mandela Metropolitan University.

2. The following aspects have been explained to me, the participant:

2.1 **Aim:** The investigators are studying: resilience in families with a child living with Type I diabetes.

The information will be used to gain an understanding of the factors that contribute to families’ bouncing back after the diagnosis of a chronic illness, in this instance, Type I diabetes.

2.2 **Procedures:** I understand that I will be provided with questionnaires that will take approximately one hour to
complete and will receive general feedback regarding the results of the study after its completion.

2.3 **Risks:** Cannot remain anonymous.

2.4 **Possible benefits:** As a result of my participation in this study more insight can be gained on the factors that make families living with a child with Type I diabetes, resilient. This information can be used in intervention programmes to offer families information and support.

2.5 **Confidentiality:** My identity will not be revealed in any discussion, description or scientific publications by the investigators.

2.6 **Access to findings:** Any new information/or benefit that develops during the course of the study will be shared as follows:

The researcher will provide information in the form of a psychological report or a feedback session to the participants as a group.

2.7 **Voluntary participation/refusal/discontinuation:**

- My participation is voluntary: YES NO
- My decision whether or not to participate will in no way affect my present or future care/employment/lifestyle: TRUE FALSE

3. The information above was explained to me/the participant by

Ms Mariska Coetzee

in Afrikaans English Xhosa Other N/A

and I am in command of this language/it was satisfactorily translated to me by

I was given the opportunity to ask questions and all these questions were answered satisfactorily.

4. No pressure was exerted on me to consent to participation and I understand that I may withdraw at any stage without penalisation.

5. Participation in this study will not result in any additional cost to myself.

A.2 **I HEREBY VOLUNTARILY CONSENT TO PARTICIPATE IN THE ABOVE-MENTIONED PROJECT**

Signed/confirmed at on 20

<table>
<thead>
<tr>
<th>Signature of witness</th>
<th>Signature or right thumb print of participant</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Full name of witness</td>
</tr>
</tbody>
</table>
I, Mariska Coetzee declare that

- I have explained the information given in this document to (name of patient/participant) and/or his/her representative (name of representative)

- he/she was encouraged and given ample time to ask me any questions;

- this conversation was conducted in **Afrikaans** by **Other**

and no translator was used / this conversation was translated into

- I have detached Section D and handed it to the participant

 Signed/confirmed at ___________ on _______ 20

<table>
<thead>
<tr>
<th>Signature of interviewer</th>
<th>Signature of witness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full name of witness</td>
<td></td>
</tr>
</tbody>
</table>
C. DECLARATION BY TRANSLATOR

I, [I.D. number]
[Qualifications and/or
Current employment]
confirm that I
- translated the contents of this document from English into
  (indicate the relevant language) to the participant/the participant’s representative;
- also translated the questions posed by
  as well as the answers given by the
  investigator/representative; and
- conveyed a factually correct version of what was related to me.

Signed/confirmed at [signature or right thumb print of translator]

Signature or right thumb print of translator
Full name of witness

I hereby declare that all information acquired by me for the purposes of this study will be kept confidential.

Signature of witness

D. IMPORTANT MESSAGE TO PATIENT/REPRESENTATIVE OF PARTICIPANT

Dear participant/representative of the participant

Thank you for your/the participant’s participation in this study. Should, at any time during the study:

- an emergency arise as a result of the research, or
- you require any further information with regard to the study, or
- the following occur:

Your are unsure about how to complete the questionnaires.
You have lost your questionnaires.

(indicate any circumstances which should be reported to the investigator)

Kindly contact [Mariska Coetzee]
at telephone number [084 657 2697]

(it must be a number where help will be available on a 24 hour basis, if the research project warrants it)
Appendix C:

Biographical Questionnaire
BIOGRAPHICAL INFORMATION

Please complete the following by making a tick in the appropriate block or by filling in the blank spaces provided. You are encouraged to answer honestly as your responses will be kept confidential.

1. Residence
   ...........................................................................................................(town or city)

2. Gender
   Male       Female

3. Current Marital Status (please tick the box which best describes your current status and fill in the number of years):
   Married       Co-habitating

   How long have you been living together with your partner? / How long have you been co-habitating with your partner? ............ Completed Years

4. Family Composition

<table>
<thead>
<tr>
<th></th>
<th>Self</th>
<th>Spouse</th>
<th>Child 1</th>
<th>Child 2</th>
<th>Child 3</th>
<th>Child 4</th>
<th>Child 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

   Is there anyone else who lives permanently with you in your home?
   No
   Yes  ☐ Please provide details.................................................................

5. Education

5.1 What is your home language?
   English       Afrikaans       Xhosa
   If other please specify: ........................................................................

5.2 What is your highest level of education completed?
   Primary school       High school: Standard:...........       Diploma       Degree
   If other please specify: ........................................................................

5. How long has your child been a diabetic?
   .........................................................................................................
6. What are the most important factors, or strengths, which have helped you as family with a Type I Diabetic child?

…………………………………………………………………………………………………………
…………………………………………………………………………………………………………
…………………………………………………………………………………………………………
…………………………………………………………………………………………………………
…………………………………………………………………………………………………………
…………………………………………………………………………………………………………
…………………………………………………………………………………………………………
…………………………………………………………………………………………………………
…………………………………………………………………………………………………………
…………………………………………………………………………………………………………
…………………………………………………………………………………………………………
…………………………………………………………………………………………………………
…………………………………………………………………………………………………………
…………………………………………………………………………………………………………
…………………………………………………………………………………………………………
…………………………………………………………………………………………………………
…………………………………………………………………………………………………………
…………………………………………………………………………………………………………
…………………………………………………………………………………………………………
…………………………………………………………………………………………………………
…………………………………………………………………………………………………………
…………………………………………………………………………………………………………
…………………………………………………………………………………………………………
…………………………………………………………………………………………………………

7. Would you like to receive general feedback regarding the results of this study? (The feedback will be in the form of a brief report about the general findings of the study).

Yes    No

If 'yes', please provide a mailing address (e.g., street address, post box address or e-mail address):

…………………………………………………………………………………………………………
…………………………………………………………………………………………………………
…………………………………………………………………………………………………………
…………………………………………………………………………………………………………
…………………………………………………………………………………………………………
…………………………………………………………………………………………………………
…………………………………………………………………………………………………………
…………………………………………………………………………………………………………

Thank you again for your time and co-operation!