

# The effect of implementing infant and child sleep interventions on parental well-being

by

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in the Faculty of Humanities, at the University of Pretoria

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Date of submission: October 2021

# Declaration

I, Jacomien Muller, declare that this thesis is my original work except where I used or quoted another source, which has been acknowledged, I further declare that the work I am submitting has never been submitted before for another degree to any university or tertiary institution for examination.

Shulle

Signature

Date: 30 September 2021

# **Ethics statement**

The author, whose name appears on the title page of this dissertation, has obtained, for the research described in this work, the applicable research ethics approval.

The author declares that she has observed the ethical standards required in terms of the University of Pretoria's Code of ethics for researchers and the Policy guidelines for responsible research.

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# Declaration of language editing

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TO WHOM IT MAY CONCERN

This serves to confirm that I have edited Jacomien Muller's thesis: *The effect of infant and child interventions on parental well-being.* 

I have corrected language errors including punctuation, article usage, tenses and subject-verb agreement. I have also improved on her choice of words, where necessary. Furthermore, I have enhanced the structure of various sentences as well as the flow and clarity of the language.

I am an academic language editor. I have a PhD in Psychology. Furthermore, I majored in English and taught English Home Language for many years. I have edited a number of dissertations and theses. I also do freelance editing for Crimson (Enago), an overseas based company that does academic editing.

Should you have any concerns, please contact me. I can be contacted on 083 453 5913.

Kind regards

Dr Genevieve Symonds

(PhD – Psychology)

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# Dedication

This study is dedicated to my father, Arend Jakobus Posthuma, who, in his own words, just couldn't hang on long enough to see it finished. He was what all fathers should be, and the reason I started and completed this thesis.

#### Abstract

This study examined how child sleep interventions affect facets of parental well-being, in order to develop guidelines which may support such well-being during the implementation of sleep interventions. In order to meet this aim, a multiphase mixed methods research design was implemented. During Phase I, a survey consisting of several questionnaires was employed to determine the incidence of subjective well-being, couple satisfaction, stress and depression among parents of children with sleep problems (n = 119). Only mothers opted to complete this phase of the study. During Phase II the sleep intervention was implemented. During Phase III a posttest was employed to determine how levels of subjective well-being, couple satisfaction, stress and depression changed after sleep intervention implementation (n = 77). Quantitative data were analysed using descriptive statistics and paired t-tests for data that were normally distributed. A Wilcoxon signed rank test was used for one measure that did not meet the criteria for normality. An exploratory qualitative design, implementing semi-structured interviews, was further utilized to explore 11 parents' experiences of wellbeing during the intervention. Qualitative data were thematically analysed. During Phase IV. findings were integrated and guidelines to support parental well-being during implementation of sleep interventions was developed. Results from Phase I suggested that the mothers experienced high levels of life satisfaction and positive affect. Moderate levels of couple satisfaction and stress were evident, and the sample experienced mild postnatal depression. In Phase III, quantitative data indicated that mothers who implemented sleep interventions experienced significant improvements in satisfaction with life, affect, postnatal depression, and perceived stress. Qualitative data indicated that parents felt substantial improvements occurred regarding their overall well-being as a result of the sleep intervention. In particular, improvements in child well-being, improved routine and improved sleep facilitated these experiences. Guidelines to support parental well-being when implementing sleep interventions were proposed.

vii

*Keywords*: Child sleep interventions, parental sleep, subjective well-being, couple satisfaction, perceived stress, postnatal depression

# **Table of Contents**

Chapter	1: Rationale, Background and Research Aims	. 1
1.1.	Introduction	. 1
1.2.	Background and Rationale of the Study	. 1
1.3.	Research Questions	. 7
1.4.	Theoretical Framework	. 8
1.5.	Contribution of the Study	. 9
1.6.	Overview of the Study	. 9
Chapter	2: Positive Psychology, Well-being and Early Parenthood	11
2.1.	Introduction	11
2.2.	Positive Psychology as an Explanatory Framework	11
2.2.	1. Defining Positive Psychology	11
2.2.	2. History of Positive Psychology	12
2.2.	3. Fundamental Assumptions of Positive Psychology	13
2.2.	4. Development of the Scientific Field of Positive Psychology	13
2.2.	5. Critique against Positive Psychology	13
2.2.	6. Second Wave Positive Psychology	15
2.2.	7. Broadening Towards a Third Wave of Positive Psychology	16
2.3.	Theoretical Perspectives on Well-being	17
2.3.	1. Hedonic Well-being	18
2.3.	1.1. The Structure of Subjective Well-being	18
2.3.	1.2. Biological and Environmental Factors Influencing Subjective Well-being	19
2.3.	1.3. Benefits of Subjective Well-being	20
2.3.	2. Eudaimonic Well-being	21
2.3.	3. The Overlap Between Subjective and Eudaimonic Well-being	22
2.4.	Subjective Well-Being and Early Parenthood	23
2.4.	1. Life Satisfaction During Early Parenthood	24
2.4.	2. The Experience of Affect During Early Parenthood	25
2.4.	3. Specific Factors Related to Parental Well-being	27
2.4.	3.1. Couple Satisfaction and Well-being During Early Parenthood	27
2.4.	3.2. Perceived Stress and Well-Being During Early Parenthood	28
2.4.	3.3. Postnatal Depression and Well-being During Early Parenthood	30
2.5.	Operationalizing Parental Well-being in of the Current Study	32
2.6.	Conclusion	32
Chapter	3: Child Sleep Interventions and Parental Well-being	34
3.1.	Introduction	34

3.2.	. Inf	ant and Toddler Sleep Patterns	. 34
3.3.	. Fa	ctors Influencing Sleep Patterns	. 35
3	.3.1.	Parental Behaviours	. 36
3	.3.2.	Parental Cognitions	. 36
3.3.3.		Parental Mental Health and Affect	. 37
3	.3.4.	Sleep Environment and Bedtime Routine	. 38
3	.3.5.	Developmental Milestones	. 39
3	.3.6.	Ability to Self-regulate	. 40
3.4.	. De	fining Sleep Problems	. 42
3.5.	. Th	e Consequences of Child Sleep Problems on Parental Well-being	. 44
3	.5.1.	Impairment in Cognitive Functioning	. 44
3	.5.2.	Strain on the Parental Relationship	. 44
3	.5.3.	Adverse Impact on Affect and Mood	. 46
3	.5.4.	Increase in Perceived Stress	. 47
3	.5.5.	The Interaction Between Mood, Affect, Relationships and Stress	. 48
3.6.	. Sle	ep Interventions	. 50
3	.6.1.	The Use of Sleep Interventions for Children with Sleep Problems	. 50
3	.6.1.1	Unmodified Extinction	. 53
3	.6.1.2	Graduated Extinction	. 54
3	.6.1.3	Extinction with Parental Presence	. 55
3	.6.1.4	Evaluation of Unmodified Extinction, Graduated Extinction and Extinction with Parental Presence	n . 56
3	.6.1.5	Bedtime Fading and Scheduled Awakenings	. 58
3	.6.1.6	The Importance of Positive Bedtime Routines	. 59
3	.6.2.	Criticism Against Sleep Interventions and Response	. 60
3.7.	. Th	e Effect of Sleep Interventions on Parental Well-Being	. 62
3	.7.1.	Satisfaction with Life	. 62
3	.7.2.	Positive and Negative Affect	. 62
3	.7.3.	Couple Satisfaction	. 63
3	.7.4.	Parenting Stress	. 64
3	.7.5.	Postnatal Depression	. 66
3.8.	. Co	nclusion	. 67
3.9.	. Ev	aluative Summary	. 68
Chapter 4: Methodology7			
4.1.	. Int	roduction	. 71
4.2.	. Re	search Questions and Aims	. 71
4.3.	. Re	search Paradigm	. 72

4.	4.	Res	search Design	72
	4.4.	1.	Rationale for Using a Mixed Methods Approach	73
	4.4.	2.	Multiphase Mixed Methods Design	73
4.	5.	Eth	ical Considerations	75
	4.5.	1.	Informed Consent and Voluntary Participation	75
	4.5.	2.	Maintaining Participant Confidentiality	76
	4.5.	3.	Avoiding Adverse Consequences	76
4.	6.	Pro	ocedure	75
	4.6.	1.	Sampling	77
	4.6.	1.1.	Population and Setting	77
	4.6.	1.2.	Sample Description	77
	4.6.	1.3.	Participants	78
	4.6.	1.4.	Sleep Intervention Procedure	80
	4.6.	2.	Data Collection	81
	4.6.	2.1.	Timing of Data Collection	81
	4.6.	2.2.	Quantitative Data Collection	82
	4.6.	2.3.	Qualitative Data Collection	85
	4.6.	3.	Data Analysis	87
	4.6.	3.1.	Quantitative Data Analysis	87
	4.6.	3.2.	Qualitative Data Analysis	88
4.	7.	Res	search Quality	89
4.	8.	Cor	nclusion	92
Cha	pter	5: R	Results and Discussion	93
5.	1.	Intr	oduction	93
5.	2.	The	e Incidence of Parental Well-Being Among Mothers of Children with Sleep	
		Pro	blems	93
	5.2.	1.	Demographic Information	93
	5.2.	2.	Descriptive Statistics	94
	5.2.	3.	Levels of Subjective Well-Being in Mothers of Children with Sleep Problems.	96
	5.2.	3.1.	Satisfaction with Life	96
	5.2.	3.2.	Positive Affect	97
	5.2.	3.3.	Couple Satisfaction	98
	5.2.	4.	The Absence of Well-Being in Mothers of Children with Sleep Problems	99
	5.2.	4.1.	Negative Affect	99
	5.2.	4.2.	Perceived Stress 1	01
	5.2.	4.3.	Postnatal Depression 1	02
	5.2.	5.	Conclusion1	02

5	.3.	Exa	amining Changes in Levels of Well-Being After Sleep Intervention	
		Imp	blementation	. 103
	5.3.1	1.	Demographic Information of Participants after Completion of Sleep Interver (Post –Test)	ntion . 103
	5.3.2	2.	Significance of Differences in Well-Being After Implementation of Sleep Interventions	. 103
	5.3.2	2.1.	Changes in Life Satisfaction	. 104
	5.3.2	2.2.	Changes in Affect	. 106
	5.3.2	2.3.	Changes in Couple Satisfaction	. 108
	5.3.2	2.4.	Changes in Perceived Stress	. 109
	5.3.2	2.5.	Changes in Symptoms of Depression	. 110
	5.3.3	3.	Concluding Summary: Quantitative Study	. 111
5	.4.	Par	rents' Experiences of Well-Being in the Context of Sleep Interventions	. 111
5	.4.1.	D	Description of Thematic Framework	. 113
	5.4.2	2.	Timeframe 1: Experiences Before the Sleep Intervention	. 114
	5.4.2	2.1.	Theme 1: Poor Sleep has an Extensive Effect on Parental Well-Being	. 115
	5.4.2	2.2.	Theme 2: General Challenges to Well-Being	. 121
	5.4.2	2.3.	Theme 3: Need for Information and Support	. 122
	5.4.3	3.	Timeframe 2: During the Sleep Intervention	. 123
	5.4.3	3.1.	Theme 4: Experience of Sleep Intervention	. 124
	5.4.3	3.2.	Theme 5: Concerns Regarding Potential Negative Consequences of Implementing a Sleep Intervention	. 129
	5.4.3	3.3.	Theme 2: General Challenges to Well-Being	. 130
	5.4.3	3.4.	Theme 3: Need for Information and Support	. 132
	5.4.3	3.5.	Theme 6: Protective Factors of Parental Well-Being During Sleep Interventi	on . 133
	5.4.4	1.	Timeframe 3: After the Sleep Intervention	. 135
	5.4.4	1.1.	Theme 7: The Intervention led to Improved Well-Being	. 135
	5.4.5	5.	Concluding Summary: Qualitative Study	. 143
Cha	apter	6: C	Conclusion and Recommendations	. 145
6	.1. Int	trod	luction	. 145
6	.2.	Sur	mmary of Research Findings	. 145
	6.2.1	1.	Summary of Findings in Timeframe 1: The Incidence of Well-Being in Parel of Children with Sleep Problems	nts . 145
	6.2.2	2.	The Effect of Sleep Interventions on Parental Subjective Well-Being	. 149
	6.2.2	2.1.	Summary of Findings in Timeframe 2: Parental Well-Being During the Sleep Intervention	) . 149
	6.2.2	2.2.	Summary of Findings in Timeframe 3: Parental Well-Being After the Sleep Intervention	. 151

6.3.	Guidelines for Supporting Parental Well-Being When Implementing a Sleep	
	Intervention	152
6.3.	Limitations of the Study	156
6.4.	Contribution of the Study	157
6.5.	Recommendations	158
6.6.	Personal Reflection	159
6.7.	Final Conclusion	160
Referen	ices	162
Append	ix A: Information Letter of the Study	218
Append	ix B: Consent Form to Participate in the Study	220
Append	ix C: Semi-Structured Interview Guide	221
Append	ix D: Ethical Approval from the University of Pretoria's Research Ethics Commit	tee
		222

# List of Tables

Table 1: Academic and Alternative Terms for Sleep Interventions	51
Table 2: Demographic Information of Participants in Phase I and III $(n = 121)$	78
Table 3: Demographic Information of the Participants in Phase I ( $n = 119$ )	94
Table 4: The Incidence of Subjective Well-Being Among Mothers Before the Implement	tation
of the Sleep Intervention	95
Table 5: Significance of Differences in SWB Before and After the Sleep Intervention	104
Table 6: Descriptive Statistics for CSI-16 Presenting the Median	108
Table 7: Description of Interview Participants	112
Table 8: Main Themes and Subthemes Related to Parental Well-being in the Context of	of
Sleep Interventions	113
Table 9: Themes Classified in Each Timeframe	114
Table 10: Quotations Relating to Improved Subjective Well-Being as a Result of Improv	/ed
Parental Sleep	139
Table 11: Quotations Relating to Improved Couple Satisfaction, Stress and Depression	as a
Result of Improved Parental Sleep	140

# List of Figures

Figure 1: Outline of Research Design	. 75
Figure 2: Timeframe 1 – Themes and Subthemes Before the Sleep Intervention	115
Figure 3: Timeframe 2 – Themes and Subthemes During the Sleep Intervention	124
Figure 4: Timeframe 3 – Themes and Subthemes After the Sleep Intervention	.135
Figure 5: Guidelines for supporting Parental Well-being when Implementing Sleep	
Interventions	156

# Chapter 1: Rationale, Background and Research Aims

# 1.1. Introduction

Although sleep is a crucial component of an individual's ability to function effectively on a daily basis (Davidson et al., 2019), parental reports of child sleep problems have revealed that up to 45% of children younger than a year (Price et al., 2012) and up to 30% of children between the ages of one and five years (Mindell et al., 2006) suffer from sleep problems. This can have a detrimental effect on parental sleep and consequently, parental well-being. Child sleep interventions can be employed to improve child sleep (Honaker et al., 2021). However, in a broad sense, there is a paucity of research on its effect on parental well-being. In this chapter, the background and rationale for this study on child sleep interventions and its influence on parental well-being are first discussed and subsequently, the research questions and aims provided. Thereafter, the theoretical framework that guided this study is discussed. In addition, so as to situate the research within existing work on this topic, possible contributions of the study are considered. The chapter concludes with an overview of the thesis.

# 1.2. Background and Rationale of the Study

Parental well-being, or lack thereof, following the birth of a child has received much research attention. Various studies have focused on happiness before and after childbirth (Aassve et al., 2012; Myrskylä & Margolis, 2014), fatigue and well-being (Giallo et al., 2011), change in parental relationships following childbirth (Doss & Rhoads, 2017) and parenthood, depression and anxiety (Epifanio et al., 2015). The findings of such studies have been inconsistent, with some finding that the birth of a child leads to increases in well-being (Aassve et al., 2012; Myrskylä & Margolis, 2014) and others revealing the opposite (Doss & Rhoads, 2017; Epifanio et al., 2015; Giallo et al., 2011). Child sleep patterns is an area of child rearing that may have an influence on parental well-being.

Infant sleep patterns change considerably during the first 12 months of life. While sleep patterns vary amongst children and across different ages, studies have found that in a 24-hour period, infants have approximately three-hour cycles of sleep during their first month, with at least three nighttime wakings each night (Burnham et al., 2002). By the age of 12 months, most sleep occurs during the night and infants have approximately five-hour cycles of sleep, with between one and two nighttime wakings (Burnham et al., 2002; Huang et al., 2016). These patterns can be disturbed by teething, illness, travel or other disruptions. The most common sleep problems reported by parents are difficulties with settling to sleep and frequent nighttime waking (Mindell et al., 2006; Paavonen et al., 2020; Price et al.,

2012), which affect approximately 45% of children before the age of one year (Price et al., 2012) and up to 30% of one- to-five-year old children (Mindell et al., 2006; Paavonen et al., 2020; Ramchandani et al., 2000).

Parental behaviours contribute substantially to child sleep patterns. Excessive parental involvement, parental separation anxiety, and unnecessary feeding have been shown to have a deleterious effect on child sleep patterns (Hsu, 2004; Mindell, Sadeh, Kohyama, et al., 2010; Sadeh et al., 2010). Parental cognitions related to infant sleep (Tikotzky & Shaashua, 2012), decisions regarding the sleep environment and bedtime routine (Mindell & Williamson, 2018) and parents' mental health (Sadeh et al., 2009) further affect whether infants achieve or maintain consolidated nighttime sleep. Furthermore, infant development contributes to sleep patterns through milestones, including attachment, object permanence (Bathory & Tomopoulos, 2017) and specifically, the ability to self-regulate (Sadeh et al., 2010).

Seven hours of good quality, appropriately timed and regular sleep, with the absence of sleep disturbances or disorders is the recommended amount of sleep for adults (Watson et al., 2015). Because of the difference between infant and adult sleep patterns, parental sleep may be disturbed, resulting in both short- and long-term health consequences. Medic et al. (2017) noted that short-term consequences include, amongst others, heightened stress responses, reduced quality of life, mood disorders and emotional distress, thus affecting parental well-being adversely. Furthermore, sleep deprivation as a result of child sleep problems has been linked to impairment in cognitive functioning (Hiscock & Fisher, 2015) and family stress and tension (Peltz et al., 2016; Sadeh et al., 2010). In addition, the loss of sleep parents of children with sleep problems suffer has been associated with an adverse impact on mood (Pemberton & Tyszkiewicz, 2016) and affect (Hiscock & Fisher, 2015) as well as elevated stress levels (Covington et al., 2017).

Parents choose to deal with infant sleep problems in various ways, often based on cultural sleep practices. One such way is to implement sleep interventions (colloquially referred to as sleep training) to teach their children how to fall asleep on their own (Mindell et al., 2006). These interventions include behavioural treatments or strategies that are aimed at teaching children to modify bedtime and nighttime behaviour in an effort to encourage independent soothing to sleep (Honaker et al., 2021). It is important to note that sleep intervention implementation is mainly a Western socio-cultural practice, and thus sleep research is most often conducted within a Western context (Ball et al., 2019). Various types of sleep interventions exist, specifically, extinction based methods such as unmodified

extinction, graduated extinction (GE) and extinction with parental presence (EwPP) as well as *no-cry* methods, for example, positive bedtime routines and bedtime fading (Whittall et al., 2021). During unmodified extinction, parents put the child to bed at a certain time and ignore the child until a set time the next morning. Although parents monitor the child for injury or illness, this technique may cause the parents anxiety and parental consistency could be a major obstacle (Blunden et al., 2016).

Because of the stressful nature of unmodified extinction, GE techniques have been developed (Mindell et al., 2006; Whittall et al., 2021). During GE, parents can either ignore the child's crying for a set period of time such as two minutes, or gradually extend the period of time in which they ignore the child, for example, between two and 10 minutes over the course of a night or several nights (Whittall et al., 2021). This is largely dependent on parental preference and the age of the child. When parents do respond to the child, the interaction should be minimal, usually from a few seconds to one minute. The aim of GE is to enable children to develop skills to soothe themselves without parental involvement. This is often referred to as self-regulation and allows for the child to fall asleep independently and without sleep associations such as rocking, holding and feeding (Mindell et al., 2006).

EwPP requires the parent to be present in the room with the child until they fall asleep while gradually decreasing the length of time spent in the room. It is recommended that the parent has as little interaction with the child as possible. For example, they may leave a hand on the child, but should not stroke or rub the child as the stimulation could keep the child from settling. Over the course of a few days or weeks, the time the parent spends in the room is gradually decreased until parental presence is minimal (Hiscock et al., 2007; Whittall et al., 2021). In the current study, parents' experiences of GE and EwPP interventions are examined.

While sleep interventions have been shown to improve infant sleep (Mindell et al., 2006; Price et al., 2012; Rafihi-Ferreira et al., 2019; Ramchandani et al., 2000), studies have focused mainly on the effectiveness and possible harmful consequences of such interventions. The literature has shown that in comparison to *no-cry* methods, extinction-based strategies are most effective in improving child sleep problems (Whittall et al., 2019), with no long-term harmful consequences for children and parents (Price et al., 2012). Studies which have evaluated the effect of sleep interventions on parents have focused primarily on maternal mood, stress and mental health (Hall et al., 2017; Hiscock & Wake, 2002; Kempler et al., 2016; Matthey & Črnčec, 2012; Mindell et al., 2009; Symon & Crichton, 2017). However, in a broad sense, not much is known about its effect on parental well-being.

In response to this paucity of research, the purpose of this study was to examine several facets of parental well-being that sleep interventions may affect, as well as how parents experience the implementation of such, thus allowing for the development of guidelines to support the well-being of parents who implement sleep interventions.

Research on parental well-being has revealed that parenthood increases both positive aspects, for example, joy, meaning, affiliation and accomplishment as well as negative aspects such as stress, frustration and anxiety (Musick et al., 2016). The experience of well-being may have a considerable influence on individual and family functioning (Nomaguchi & Milkie, 2020; Pakenham & Cox, 2012). Therefore, it is imperative to consider the potential consequences of implementing sleep interventions on parents' well-being. Any deterioration or improvements in parental well-being may affect the family unit and its functioning (Newland, 2015), thus potentially leading to increased or decreased well-being for the entire family.

Although well-being has been defined in various ways and a number of theories thereof have been developed, researchers do not concur with such conceptualisations. The term has been defined as a function of self-acceptance, positive relationships with others, autonomy, environmental mastery, purpose in life and personal growth (Ryff, 2018a; Ryff & Keyes, 1995), optimal functioning and experience (Ryan & Deci, 2001) and a function of positive emotion, engagement, relationships, meaning and accomplishment (Seligman, 2011; Seligman, 2018). However, the framework within which well-being is discussed has usually focused on some measure of hedonic well-being or eudaimonic well-being. Hedonic well-being, also referred to as subjective well-being (SWB), is related to pleasure and the emotion of happiness or feeling good and can be measured in relation to positive emotions and satisfaction with life. Eudaimonic well-being is associated with the experience of meaning, functioning well, flourishing in the context of life challenges and warm relationships with others (Goodman et al., 2017; Ryff, 2018a; Wissing, 2020). Well-being can also be considered in relation to the absence of disease or distress and the presence of positive affect, happiness, social connection and wellness (Goodman et al., 2020). In response to an ongoing debate on the structure and measurement of well-being, Goodman et al. (2020), proposed a hierarchical model of well-being that encompasses a single general factor of well-being, with four lower content-free levels. This hierarchical model is an endeavour to consolidate different models of well-being and is based on research that concluded that different models of well-being measure the same type of well-being (e.g., Disabato et al., 2016; Goodman et al., 2017). Goodman et al. (2020, p. 3) defined general wellbeing as "perceived enjoyment and fulfilment with one's life as a whole." While the authors concurred

that structure is more important than the particular words, the phrasing of general well-being has a similar meaning to that offered by Diener (1984) regarding SWB. In fact, the authors argued that well-being is inherently subjective (Goodman et al., 2020).

SWB is the extent to which individuals perceive their life is going well (Diener, Lucas et al., 2018) and includes broad appraisals related to life satisfaction, as well as specific feelings related to individuals' circumstances or life events (Diener et al., 2017). Diener (1984) proposed a tripartite model of subjective well-being, which falls within the hedonic perspective and comprises three aspects: an evaluation of one's satisfaction with life, positive affect, and low negative affect, with judgements reflecting both cognitive and emotional reactions to life circumstances (Diener et al., 2002). In this study, well-being was conceptualized from the hedonic perspective so as to include the presence of high levels of satisfaction with life, positive affect and couple satisfaction as well as the absence of negative affect, postnatal depression (PND) and perceived stress.

Diener et al. (1985) stated that satisfaction with life constitutes part of well-being and based on a subjective assessment of one's circumstances, is an evaluative process of what is considered an appropriate standard. Parenthood increases both positive and negative aspects, which may have an effect on life satisfaction. Additionally, there is an association between insufficient sleep and diminished satisfaction with life (Zhi et al., 2016). Despite this, there is a paucity of research on parental satisfaction with life and the use of sleep interventions. Furthermore, while a few studies on sleep interventions have examined parental well-being from the perspective of negative affect (Hall et al., 2015; Hall et al., 2017; Matthey & Črnčec, 2012; Mindell et al., 2009; Price et al., 2012), only one study has explored how sleep interventions influence positive affect in parents (Symon & Crichton, 2017). Because it has been established that happiness protects against illness (Veenhoven, 2008), increases productivity, and leads to enhanced quality of relationships (Diener & Tay, 2012), it is necessary to establish what influence sleep interventions have on both positive and negative affect. These gaps in the knowledge base are addressed in this study.

In addition to examining the three components of SWB, couple satisfaction, PND and perceived stress were explored in this study. As couples transition to parenthood, they experience many changes in facets of their relationships, one of which is couple satisfaction. Research has shown that relationship satisfaction often declines with the addition of children (Chong & Mickelson, 2016). Furthermore, changes in marital quality have been linked to parental well-being (Myrskylä & Margolis, 2014) and higher levels of marital satisfaction have been associated with higher quality parent-child relationships (Malinen et al., 2010).

Nevertheless, the few studies that have explored how child sleep interventions influence couple satisfaction (Mindell et al., 2006; Moore & Mindell, 2013; Smart & Hiscock, 2007) have yielded inconsistent results. While some studies have demonstrated that couple satisfaction increases (Mindell et al., 2006; Moore & Mindell, 2013), others have found no change in couple satisfaction after a sleep intervention (Smart & Hiscock, 2007).

In addition, PND disproportionately affects mothers of children with sleep problems (Hiscock et al., 2008; Ystrom et al., 2017). Furthermore, parental PND has been associated with relationship breakdown and an increased risk of both emotional and behavioural problems in children (Avan et al., 2010; Field, 2018; Garthus-Niegel et al., 2018; Hiscock et al., 2008). Studies have revealed that parental mood improves and depression decreases after the implementation of sleep interventions (Field, 2017; Hall et al., 2017). While the existing literature has consistently revealed improvements in maternal depression, fewer studies have explored the effect of sleep interventions on paternal depression. The studies that have involved fathers have revealed inconsistent results, with either improvements (Hall et al., 2015; Thome & Skuladottir, 2005) or no improvements (Hall et al., 2006) in depression scores after a sleep intervention. Furthermore, there appears to be a dearth of qualitative research on parental depression in the context of sleep interventions. Accordingly, it is important to expand the literature in relation to the effect of sleep interventions on PND.

Finally, during parenthood, stress increases as a result of increased demands and responsibilities, household chaos and a decrease in leisure activities and quiet time (Nomaguchi & Milkie, 2020). Moreover, child sleep problems exacerbate parental stress (Covington et al., 2017). Since parenting stress has a deleterious effect on the well-being of parents (Sharda et al., 2019), it is importance to determine whether the implementation of sleep interventions can reduce parental stress. A review of studies indicated that stress decreases after the implementation of sleep interventions (Field, 2017). However, while Matthey and Črnčec (2012) found that up to half of parents experienced no improvements in stress after an intervention, other studies revealed parents experienced the implementation itself as very stressful (Blunden & Baills, 2013; Blunden et al., 2016). These inconsistent findings merit further investigation. Moreover, there is a scarcity of qualitative research on sleep interventions and parenting stress. Despite Tse and Hall's (2008) finding that parents find it difficult to hear their children cry, more qualitative research is needed to understand parents' subjective experiences of perceived stress in the context of sleep interventions. Therefore, the present study aimed to examine the change in perceived stress before and after interventions as well as explore perceived stress qualitatively during the implementation, thereby addressing the knowledge gap.

Because well-being is central to individual as well as family functioning (Nomaguchi & Milkie, 2020), it is necessary to understand how parental well-being is affected by sleep interventions. It is also important to explore how parents experience the implementation of sleep interventions in depth because some parents experience the implementation and maintenance of sleep interventions as difficult, which may lead to attrition, non-compliance and avoidance of treatment plans (Blunden et al., 2016). There is a paucity of qualitative research on how parents experience the implementation of sleep interventions (Tse & Hall, 2008). Shedding light on how parents experience the implementation of sleep interventions as it relates to their well-being specifically, will contribute to an understanding of the difficulties and rewards related to sleep interventions. Accordingly, practitioners will be able to find more effective and acceptable solutions for parents, which will lead to enhanced programme development. Consequently, further research is required to expand the scope of knowledge. The goal of this study was to address the gaps in the knowledge base by exploring several facets of well-being that are affected by sleep interventions, thereby contributing to and enriching the extant literature. Changes in facets of parental well-being following sleep intervention warrant further exploration because the results of this study allowed for the development of guidelines to support the well-being of parents who implement sleep interventions. Furthermore, the results of this study on parental well-being, which falls within the scope of positive psychology, could contribute to the application and practice of positive psychology.

# 1.3. Research Questions

The main aim of this study was to explore how the use of sleep interventions affect parental well-being as well as to examine how parents experience the implementation of sleep interventions in their infants and young children. As such, two broad research questions were posed:

# 1. What changes occur in parental well-being after the implementation of sleep interventions for child sleep problems?

In order to answer this research question, a quantitative research approach, with the following aims, was employed:

 To determine levels of SWB as measured through satisfaction with life, positive and negative affect, and couple satisfaction in parents with infants and young children who experience sleep problems;

- To determine the absence of well-being as evident in the incidence of postnatal depression and perceived stress in parents with infants and young children who experience sleep problems;
- To examine changes in levels of satisfaction with life, positive and negative affect, and couple satisfaction in parents after implementing sleep interventions; and
- To investigate changes in levels of postnatal depression and perceived stress in parents after implementing sleep interventions.
- 2. How do parents of infants and young children, who have chosen to implement sleep interventions, experience well-being in the context of the intervention? To answer this research question, a qualitative approach was adopted.

The final research aim encompassed findings from both research questions so as to provide guidelines for supporting parental well-being during the implementation of sleep interventions.

# **1.4.** Theoretical Framework

This study was conducted within the framework of positive psychology and focused specifically on the well-being of parents. Positive psychology may be explained as the "study of the conditions and processes that contribute to the flourishing or optimal functioning of people" (Gable & Haidt, 2005, p. 103). Seligman and Csikszentmihalyi (2000) asserted that amongst others, while positive psychology focuses on well-being, satisfaction and happiness at a subjective level, it also focuses on the capacity for love, interpersonal skills and perseverance at an individual level. Positive psychology "revisits 'the average person' with an interest in finding out what works, what is right, and what is improving" (Sheldon & King, 2001, p. 216). The aim of positive psychology is to recognise and understand the role and function of positive experiences and relationships with others, building of strengths and resilience and how these factors contribute to health, well-being and optimal functioning (Gable & Haidt, 2005). As such, contributors to healthy psychological functioning are important considerations and parental well-being, as the primary construct under investigation in this study, is clearly classified within the scope of positive psychology.

Studies have explored sleep interventions from a medical, behavioural and cognitive approach, with a focus on distress. It is believed that the present study may contribute to the field of positive psychology because it focused not just on pathology and distress (PND and

perceived stress), but also on how satisfaction with life, positive and negative affect, and couple satisfaction may be influenced by sleep interventions. By considering both positive and negative experiences of well-being, the study aligned with second wave positive psychology, which focuses on understanding the balance between the positive and negative in order to fully comprehend a phenomenon under investigation (Lomaz & Ivtzan, 2015). Furthermore, by moving towards a third wave of psychology as suggested by Lomas et al. (2020), this study employed the principles of positive psychology within a systemic context, that is, parenting and child sleep interventions.

# 1.5. Possible Contribution of the Study

This study could provide a theoretical contribution to the limited research on parental well-being and sleep interventions. As one of the first studies to consider the influence of child sleep interventions on subjective well-being as defined by Diener (1984), it may also contribute to new knowledge in the field. Furthermore, the existing knowledge of parental well-being, specifically, in relation to couple satisfaction, PND, and stress could be expanded. The mixed methods research approach used in this study may be particularly valuable because there is limited qualitative research on this topic and therefore, it provides comprehensive insight into the phenomena under investigation. This study also aimed to propose guidelines, which were absent, to support parental well-being when implementing sleep interventions. The insights gained from this study may be of assistance to practitioners to find more effective and acceptable solutions for parents, thus leading to enhanced programme development and promotion of improved parental well-being when implementing an intervention.

# 1.6. Overview of the Study

In this chapter, a general overview of the study, in which the background and rationale for the study was clarified and the research questions and objectives outlined, was provided. An overview of positive psychology and well-being, with specific focus on parental well-being within the context of early parenthood, is presented in Chapter 2. In this chapter, the overall impact that children have on parental well-being is highlighted. In Chapter 3, child sleep interventions and parental well-being are discussed. Consideration is given to factors that have an influence on child sleep patterns. Furthermore, sleep problems are explained with specific emphasis on their impact on parental well-being. As a method of ameliorating child sleep problems, sleep interventions are described and the impact of sleep interventions on parental well-being is examined. The research method employed in this study is explained in Chapter 4. The research findings are presented, interpreted and discussed in Chapter 5. The thesis is concluded in Chapter 6: the findings are summarized, proposed

guidelines for the support of parental well-being are presented and research limitations and recommendations for future studies are discussed.

### Chapter 2: Positive Psychology, Well-being and Early Parenthood

# 2.1. Introduction

Early parenthood can be a tumultuous period. It can be emotional and exhausting, rife with high levels of both positive and negative emotions, responsibility and strain. Parents are usually confronted with countless daily hassles related to childcare, which range from physical chores such as cleaning, to emotional tasks such as resolving arguments. Research has revealed that the daily hassles parents experience have an adverse effect on their well-being (Nelson-Coffey et al., 2019). Nevertheless, there are also joys associated with parenting. Studies have found that the enhanced life satisfaction linked to parenthood may be counteracted by associated financial and time constraints (Pollmann-Schult, 2014). Although it would be easy to focus solely on the costs associated with parenthood, Seligman (2002) noted that attention should be given to the positive aspects of an experience, in this case, the experience of parenting. Accordingly, positive psychology as the theoretical framework underpinning this study is introduced in this chapter. As well-being is a central construct of positive psychology, theoretical perspectives on well-being are also elucidated. Thereafter, well-being is considered in the context of early parenthood.

### 2.2. Positive Psychology as an Explanatory Framework

#### 2.2.1. Defining Positive Psychology

Positive Psychology (PP) may be regarded as the "study of the conditions and processes that contribute to the flourishing or optimal functioning of people" (Gable & Haidt, 2005, p. 103). Seligman (2003) expressed the opinion that at its core, PP is a field that examines what makes life worth living. PP "revisits 'the average person' with an interest in finding out what works, what is right, and what is improving" (Sheldon & King, 2001, p. 216). The practices and interventions developed through PP aim to foster resilience, prevent mental disorders and encourage individuals to live their best possible lives (Kern et al., 2020). Seligman and Csikszentmihalyi (2000) stated that at a subjective level, the field of PP concerns itself with positive subjective experiences, including well-being, satisfaction, joy, optimism, hope and faith. While PP involves positive personal traits such as the capacity for love, courage and interpersonal skills at an individual level, at a group level, it deals with civic virtues and institutions that motivate individuals to exemplary citizenship, including through altruism and responsibility. Finally, as a scientific field, PP is concerned with factors that enhance individuals' flourishing and overall well-being. The focus of this study is on the well-being of parents who implement sleep interventions and as such, PP is a suitable framework from which to structure the research.

#### 2.2.2. History of Positive Psychology

The basic principles of PP, which focus on that which is good and strong in human nature, are not new. There are both early Western and Eastern perspectives on what would today be considered facets of PP. For example, as far back as Greek mythology, early Western constructs of PP included hope, where there was a need to believe that negatives, for example, wickedness and ugliness could be transferred into positives such as goodness and beauty. On the contrary, Eastern perspectives focus on the more spiritual element of enlightenment (Lopez et al., 2018). More recently, in humanistic psychology, concepts such as Maslow's self-actualisation (1971), Erikson's (1959) interest in development and growth and Jahoda's (1959) emphasis on mental health instead of illness, have had a similar focus. However, Seligman first referred to the scientific field of PP in his address to the American Psychological Association (APA) when he became president in 1998. During the last two decades, the field of PP has gained increasing prominence.

Seligman and Csikszentmihalyi (2000) formally introduced the field of PP, as guest editors, in the American Psychologist in which they explained that personal experiences convinced them that a movement towards PP was imperative. Seligman's interaction with his five-year-old daughter who called him a grouch resulted in an epiphany in which he asserted that, amongst others, raising children was about nurturing that which is good instead of concentrating on fixing that which is bad. This led to an understanding that the field of psychology as a whole had moved towards the same perspective. Before World War II, the field of psychology had three missions, namely, curing mental illness, ensuring people lived more productive and fulfilling lives, and identifying and cultivating talent (Seligman & Csikszentmihalyi, 2000). After World War II, the profession of clinical psychology flourished with the increasing call to help and heal war veterans. Consequently, the focus of both research and applied psychology shifted largely to pathology at the expense of helping people cultivate better lives and fostering talent. Csikszentmihalyi believed that the need for PP was realised during World War II when he witnessed how some individuals remained beacons of hope and integrity despite adverse circumstances. This led to an interest in discovering on what sources of strength these individuals drew (Seligman & Csikszentmihalyi, 2000). Both Seligman and Csikszentmihalyi became aware that for decades the focal point of psychological research had been on what had gone wrong and how to fix it. For many years, psychology employed a weakness, disease or pathology model (Snyder & Lopez, 2007; Lopez et al., 2018), which emphasised the negative aspects of human nature. Therefore, PP originated as a counter response to this pathological model of humans.

### 2.2.3. Fundamental Assumptions of Positive Psychology

Seligman and Csikszentmihalyi (2000) noted that PP concentrates on the understanding and development of factors that allow individuals, communities and societies to flourish. When discussing the fundamental assumptions of the field, Seligman (2003, p. 126) stated, "Happiness and well-being are the desired outcomes of positive psychology." Seligman (2003) further distinguished between three different types of desirable lives: while the pleasant life relates to a life that effectively pursues positive emotions in the present, past and future, the good life uses strengths and virtues to obtain gratification in the main spheres of life. Finally, the meaningful life employs strengths and virtues in service of something larger than the individual. Therefore, a core assumption of PP is the belief that human beings aspire to lead meaningful and fulfilling lives and strive to develop what is best within themselves, while heightening their experiences of life (Donaldson et al., 2015).

# 2.2.4. Development of the Scientific Field of Positive Psychology

Growth and change are inevitable in a field of study as new thoughts, theories and evidence emerge. PP is no different, and the development of this field has been compared to waves (Lomas et al., 2020). The first wave centred on creating change in the field of psychology, moving from a traditionally pathological model of psychology so as to also concentrate on positive constructs in order to realise a more nuanced perspective of human experience. Seligman and Csikszentmihalyi (2000) initiated this first wave when they placed emphasis on positive aspects of experience. This call for change required a study of human strengths to redress the lack of knowledge engendered by the restricted research focus of the pathology model. The aim was to recognise and understand the role and function of positive experiences, relationships with others, the nature of strengths, as well as how these factors contribute to health, well-being and optimal functioning (Gable & Haidt, 2005). As with any emerging field, PP has not been without critique. The progress made in the first wave has allowed scholars to reflect on the notion of positivity more critically (Lomas et al., 2020).

# 2.2.5. Critique against Positive Psychology

As noted, although the first wave centred on positive experiences, one of the criticisms against PP is the notion that it originated from an evaluative or ethical concept of positive versus negative (Fernandez-Ballesteros, 2003). Fernandez-Ballesteros (2003) acknowledged that clinical psychology and psychopathology inherently deals with the negative in the sense that it focuses on human suffering, but also questioned whether it is acceptable to generalise this emphasis on negative processes and structures to the entire field of psychology. Fernandez-Ballesteros (2003) highlighted that key positive constructs

such as empathy, optimism, well-being and creativity has been studied for decades, often showing rapid growth from one decade to the next. Therefore, while the term positive psychology is relatively new, the study of human strengths is not. Although Fernandez-Ballesteros (2003) raised a valid point with regard to the study of positive constructs, she did not include the emphasis placed on negative constructs in comparison to positive constructs in her criticism. In their introduction to PP Seligman and Csikszentmihalyi (2000) asserted that historically there had been a focus predominantly on the negative, or an almost exclusive attention to pathology. It is noteworthy that they did not state that the positive was wholly ignored as Fernandez-Ballesteros (2003) implied, but rather that the focus shifted more towards the negative than the positive. Importantly, they declared that the aim of PP is to shift the focus of psychology from a preoccupation with "repairing the worst things in life to also building positive qualities" (p. 5; italics added). Therefore, the aim has always been to have a more balanced perspective of human nature as opposed to swinging the pendulum completely towards the positive, as some critics have suggested (Carstensen & Charles, 2003; Fernandez-Ballesteros, 2003). Snyder and Lopez (2007) concurred when they stated that it is important to note that the field of PP, while independent, was not developed to replace the pathology approach. This is of paramount importance as focusing only on one aspect of human experience, either positive or negative, results in an incomplete portrayal of humankind.

Several PP researchers have noted the importance of not concentrating exclusively on the positive. Aspinwall and Staudinger (2003) cautioned against studying positive states in isolation and thereby ignoring negative states. They added that the study of human strengths should not focus on how negative experiences can be avoided but rather on how negative and positive experiences are interrelated. Carstensen and Charles (2003) concurred that it is not beneficial to focus only on the positive. They stated that in relation to aging, for example, it is crucial to generate a balanced characterisation of both problems and strengths because the presence of one cannot be ignored in favour of the other. Leontiev (2006) argued that one of PP's challenges is to embrace both the positive and negative in a unified explanatory framework and asserted that "all of the negative has some roots in us and in the structure of our lives, as does the positive" (p. 50). Consequently, the goal is to move away from being preoccupied with only repairing the worst things in life to developing the best qualities in life by shifting the focus from disease and pathology towards a study of human strengths and virtues (Snyder & Lopez, 2007). Snyder and Lopez further stressed the necessity of broadening the philosophy and scope of practice not necessarily away from a negative framework, but to the enhancement of strengths, talents and skills to achieve a

more comprehensive view of humankind. Since human strengths are a buffer against mental illness, it is essential to foster strengths for the effective prevention of mental illness.

Another important criticism against PP, especially the first wave, is the broad claims about positive experiences even though theories and approaches have originated predominantly from the Western sphere (Christopher & Hickinbottom, 2008). In addition, Kern et al. (2020) asserted that while the focus of PP is predominantly on the individual, social contexts and forces that may influence the individual are ignored. Sheldon (2011) acknowledged that PP as a field focuses on how to optimise human life by emphasising that which is positive, but also cautioned that adopting an ideological stance that humans are more positive than not is dangerous and could disadvantage PP as a whole. Sheldon further expressed the opinion that an appreciative view towards PP is essential because while it considers the positive, it does not discard the negative, but rather adopts the view that all fields of psychology are inherently positive in that the knowledge acquired can be employed to "solve problems and improve what is in need of improvement" (p. 423). Sheldon (2011) added that there is a need for PP researchers to integrate various positive topics as well as positive and negative topics.

In contemplating the future of PP, Csikszentmihalyi and Nakamura (2011) noted that while some have argued that PP should endeavour to move towards an overarching theory of human flourishing, others have debated that PP perspectives should be integrated with other sub-disciplines of the field with the ultimate goal of PP finding a balanced understanding of human functioning. In essence, several authors have expressed the notion that PP cannot only focus on positive experiences, but should rather concentrate on a balanced view of both the positive and negative so as to realise optimal human functioning. Second wave PP, which incorporates this balanced view, is subsequently discussed.

# 2.2.6. Second Wave Positive Psychology

Second wave positive psychology (SWPP) examines the balance between the positive and negative so as to fully comprehend the phenomena under investigation (Lomas & Ivtzan, 2016). This dialectic focus is essential as PP has been critiqued for concentrating too much on the positive and in essence, creating a polarising effect by inadvertently conceptualising the negative as problematic. For example, Lomas (2016a) noted that from the perspective of well-being, while optimism has been hailed as absolutely good, pessimism has been perceived as absolutely bad. Yet, too much optimism can be harmful to well-being as it may contribute to underappreciating risk. Conversely, pessimism can be good in the sense that it may prompt proactive coping (Lomas, 2016a). Against the background of such

criticism, it is noteworthy that a comprehensive framework from which to view human nature cannot be established instantaneously. Although there was a paucity of research on the more positive aspects of human nature in the past, this was a focal point for research during the first decade of PP. During the second decade, the critique against the field has been met positively and implemented. Many PP scholars have highlighted the importance of a more nuanced assessment of human nature. SWPP is the necessary evolution towards this more comprehensive view of flourishing. Furthermore, it expands the framework of PP towards an understanding that well-being involves the interplay between both the positive and negative, provided the negative contributes to well-being in some sense (Lomas, 2016a). In the present study, changes in parental well-being following the implementation of sleep interventions, which can be stressful, especially initially, as a result of the modification of an accepted routine were examined. SWPP is relevant to this study in that the initial difficulty of sleep intervention implementation may result in better sleep and accordingly, a positive change for both children and parents, as well as parents' enhanced well-being.

Wong (2017) argued that SWPP, at its core, aims to bring out the best in people in spite of, and because of, the darker aspects of life. Wong (2017) further stated that hardships and despairs, while undesirable, are beneficial in developing character strengths and thus, are essential for becoming fully functioning. It is noteworthy that although SWPP is dialectic in the sense that the positive and negative are considered, it remains a positive psychology and the predominant focus is on *positive* constructs and goals, including human well-being and flourishing (Lomas, 2016b).

## 2.2.7. Broadening Towards a Third Wave of Positive Psychology

Since the inception of PP, research on positive constructs has increased considerably. However, the focus of these studies has been primarily on individuals. Accordingly, a broadening of PP's scope is imperative (Lomas et al., 2020). Lomas et al. (2020, p. 8) argued that a "movement towards greater complexity" is the defining feature of the third wave of PP. In this regard, scholars have proposed that PP constructs need to be examined across cultures and in diverse and meaningful contexts (Lopez et al., 2007) so that individuals throughout the world can benefit from the resultant knowledge. Furthermore, it is vital for research to examine not only the cognitive and behavioural aspects of positive experiences, but also the neurological and physiological (Snyder & Lopez, 2007) because a recognition of how physiology is associated with human strengths allows for a more comprehensive understanding of positive experiences. Similarly, Kashdan and Steger (2011) noted the importance of incorporating biological perspectives into research on PP in order to make it more robust. They further stressed the importance of integrating PP with other

subfields so as to deepen and enhance the field as a whole. Lomas et al. (2020) suggested that this broadening of research, both epistemologically and methodologically, will drive the third wave of PP. Accordingly, they proposed an expansion in scope in relation to context, systems, culture and ethics. They added that an expansion in methodologies should include qualitative, implicit and computational enquiries.

In line with this broader scope of PP, Kern et al. (2020) proposed a systems informed theory of PP in which the focus is on integrating systems sciences and PP. In this regard, system sciences is a broad study of the nature of systems. Furthermore, systems informed PP (SIPP) theory proposed by Kern et al. (2020) emphasises social systems, including family, school, businesses and neighbourhoods. SIPP has a shared purpose, namely, cultivating the well-being of systems, enabling the co-evolution of systems and creating positive futures. In addition, it draws on systems principles such as interconnectedness, dynamics, and boundaries. Finally, it makes several epistemological, political and ethical assumptions, for example, objective reality but subjective perspectives, rights with responsibilities and striving towards what is collectively good. This should be viewed in conjunction with the broader assumption that humans "interdependently co-exist with themselves, others and the environment" (Kern et al., 2020, p. 708). They further advocated that SIPP can move the field of PP from a predominantly individual focus to a "science of collective benefit" (p. 714).

While Lomas et al. (2020) acknowledged that this third wave is nascent and may not be realised fully in either scope or direction, research in the field of PP continues to broaden our understanding of well-being. Accordingly, theoretical perspectives of well-being are subsequently discussed.

# 2.3. Theoretical Perspectives on Well-being

Although there are various definitions and theories of well-being, researchers have yet to agree on a clear conceptualisation thereof. Well-being, for example, has been defined as a function of self-acceptance, positive relationships with others, autonomy, environmental mastery, purpose in life and personal growth (Ryff, 2018a; Ryff & Keyes, 1995), optimal functioning and experience (Ryan & Deci, 2001) and a function of positive emotion, engagement, relationships, meaning and accomplishment (Seligman, 2011; Seligman, 2018). Although the framework within which well-being is discussed usually focuses on the constructs of hedonic well-being, eudaimonic well-being or both, an accepted integrated perspective is still required. Hedonic well-being will be considered first, followed by an exploration of eudaimonic well-being.

#### 2.3.1. Hedonic Well-being

Hedonic well-being, which is also referred to as subjective well-being (SWB), is related to pleasure and feeling good, and can be measured in terms of positive emotions and satisfaction with life. SWB may be explained as the extent to which individuals perceive that their life is going well, as determined from the perspective of that individual (Diener, Lucas, et al., 2018). It includes broad appraisals related to life satisfaction as well as specific feelings linked to an individual's circumstances or life events (Diener et al., 2017).

2.3.1.1. The Structure of Subjective Well-Being. In order to realise a more enhanced understanding of the construct of SWB, it is crucial to examine its structure in greater depth. Diener (1984) posited a tripartite model, with SWB comprised of three parts: an evaluation of one's satisfaction with life, positive affect and low negative affect, with judgements reflecting both the cognitive and emotional reactions to life circumstances (Diener et al., 2002). Satisfaction with life is an evaluative judgement, which is based on a subjective assessment of an individual's circumstances, with what is considered an appropriate standard (Diener et al., 1985). Therefore, it may be explained as a cognitive assessment of one's life in relation to a personal standard of what constitutes a good life (Diener, 1984). It is unclear at this stage how this standard is formed or how it changes over time. It is also unclear whether social comparison, personal ideals, and past experiences are employed to determine the appropriate standard (Luhmann & Intelisano, 2018). Given the extensive individual differences in relation to personality, cognitive style and life experiences, it may be reasonable to assume no single underlying mechanism for the formation of a personal standard, which can be attributed generally, exists. Judgements on life satisfaction may include life as a whole or specific domains such as work and health (Diener, Oishi, et al., 2018). Factors relevant to life evaluations such as health and income appear to have a particular influence on life satisfaction (Diener et al., 2017).

Regarding affect, this facet involves the assessment of an object, event or situation as positive or negative as well as the resultant activation or deactivation of arousal (Anderson et al., 2019; Parkinson et al., 1996). It is important to note that positive and negative affect are independent and not simply opposites (Diener et al., 2002). Therefore, the absence of negative affect will not necessarily increase positive affect. In relation to SWB, an affective balance skewed towards the positive is important, that is, the experience of more positive affect than negative affect. This implies the presence of positive affect such as joy, contentment and hope, and absence of negative affect, for example, fear, anger and sadness. While positive affect appears to be influenced by, amongst others, social relationships, negative affect seems to be related to internal and social conflicts as well as the perception of problems (Diener et al., 2017). There are slight cultural differences in affective appraisals: while low-arousal positive emotions such as contentment are more valued in Pacific Rim cultures, high-arousal positive emotions, for example, excitement, are more valued in Western cultures (Diener et al., 2017). Despite these cultural differences, a longitudinal meta-analysis conducted by Busseri (2018) revealed that SWB is related to the frequency, rather than intensity, of positive and negative affect.

Research has supported SWB as a hierarchical construct, with life satisfaction, positive affect and negative affect uniquely and jointly influencing SWB as well as robust associations between each facet (Busseri, 2018). As expected, there is a negative association between positive affect and negative affect as well as negative affect and life satisfaction. In addition, a positive association between life satisfaction and positive affect exists. While affect and life satisfaction contribute to the structure of SWB, it is necessary to examine additional factors that influence SWB.

2.3.1.2. Biological and Environmental Factors Influencing Subjective Well-Being. It appears that genetics and environmental conditions are two factors that have an impact on SWB. SWB is moderately heritable in that between 30% and 40% of individual differences can be attributed to genetics (Roysamb & Nes, 2018). Biological theories focus on how genetics and temperament influence SWB. Temperament, as determined by genetics, is thought to have an influence on SWB as individuals high in extraversion and those low in neuroticism tend to be happier (Costa & McCrae, 1980). In this regard, happiness may be regarded as a measurable indicator of SWB, thus suggesting that some individuals are likely to be happier than others, with little that can be done to change this.

According to the set point or hedonic treadmill theory of well-being, individuals have a set point or basic level of neutrality within which they function. Although certain factors can increase or decrease happiness, it always returns to its set point, similar to walking on a treadmill (Brickman & Campbell, 1971). This theory implies that efforts to increase happiness and therefore, well-being, are likely to fail since individuals will always revert to their basic neutrality. Although this bleak view of human well-being gained widespread acceptance, research resulted in Diener et al.'s (2006) revision of the theory in which they used SWB as a baseline approach. Studies have revealed that not all individuals' set points are neutral. Most people are quite happy and are classified above neutral in affect balance, provided they live in a society where enough human needs are met. Extremely adverse life circumstances, however, may result in an affect balance below neutral (Diener, Diener, et

al., 2018). This affect balance also varies across individuals, with different set points for each person determined largely by personality factors. Therefore, Diener et al. (2006) advocated multiple set points of positive emotion, negative emotion and life satisfaction, with each individual set point capable of change in response to life events. The revision of the set point theory, allowing for individual differences in both set points and adaptability, creates a more positive outlook for potential change to take place. The revised set point theory has recently received support. In a comprehensive review of hedonic adaptation, Luhmann and Intelisano (2018) demonstrated that while SWB is stable for most people, lasting change is possible. Diener, Oishi, et al. (2018) argued that while the influence of genetics on SWB is not disputed, the environment also has an effect on SWB.

As noted previously, societal and life circumstances can also influence SWB. Between 60% and 70% of SWB may be attributed to environmental factors, including the fulfilment of needs and changing personal circumstances (Diener, Oishi, et al., 2018). While the satisfaction of goal theories assume that the satisfaction of specific needs, desires or goals will increase SWB, dissatisfaction is assumed to decrease SWB. Furthermore, several studies have found that life satisfaction increases with goal achievement (Diener, Lucas, et al., 2018). However, life satisfaction is only one component of SWB and thus, inferences about the influence of goal achievement and SWB should be made with caution. Tay and Diener (2011) revealed that the fulfilment of basic and psychological needs is positively associated with SWB. In this regard, whereas the fulfilment of basic needs such as food and shelter has been associated with increased life satisfaction, the fulfilment of psychological needs, for example, the satisfaction of social needs and receiving respect from others has been associated with increased positive affect. Life events and personal circumstances can also influence SWB. For example, marriage and unemployment have a positive and negative effect, respectively, on SWB long after the event (Diener et al., 2017). Interestingly, having children is not associated with higher SWB and rather, is dependent on factors such as marital quality and sleep disturbances (Nelson et al., 2014). In this regard, lower marital quality and sleep disturbances are independently related to decreases in SWB.

**2.3.1.3. Benefits of Subjective Well-being.** Research has established that increased SWB can be advantageous in a number of respects. For instance, Diener et al. (2017) found an association between increased SWB and health and longevity. In this regard, individuals high in SWB tend to engage in health behaviours such as regular exercise and drinking less alcohol (Diener, Oishi, et al., 2018). There is also an association between increased SWB and good social relationships, where individuals high in SWB are more likely to get married, and have more friends, than individuals low in SWB (Moore et al.,

2018). Furthermore, increased SWB has been shown to be associated with increased productivity and higher work performance (Tenney et al., 2016) as well as higher resilience (Fredrickson et al., 2003). While it appears that high SWB is always beneficial, studies have revealed that this is not necessarily the case. Oishi et al. (2009) demonstrated that moderately high SWB is more optimal for achievement activities than very high SWB. Diener, Diener, et al. (2018) also examined whether interventions to increase SWB have detrimental effects such as, for example, increasing interpersonal trust while also increasing gullibility or obedience. Therefore, it is recommended that future studies on SWB should focus on underlying processes that could affect SWB as well as the long-term effects of it.

# 2.3.2. Eudaimonic Well-being

Although a number of definitions of eudaimonic well-being (EWB) have been proposed, there is a lack of consensus among scholars in this regard. Eudaimonia has a long history: as early as the 4<sup>th</sup> century BCE, Aristotle referred to living a good and virtuous life (Huta, 2016). Throughout history, scholars continued to contribute their perspectives. Csikszentmihalyi (1990) developed a theory of optimal experiences, which emphasises the importance of finding meaning by pursuing specific goals and engaging in a state of flow, namely, psychologically complex tasks that challenge skills but afford a sense of mastery and competence. More recently, Wissing (2020) defined EWB as the experience of meaning, functioning well, flourishing in the context of life challenges and warm relationships with others. Ryff (1989, 2018a, 2018b), a prominent EWB researcher, who employed the term psychological well-being, proposed that psychological well-being comprises six key components. Self-acceptance is a positive attitude towards the self, personal growth relates to feelings of continued development, purpose in life involves having goals and a sense of direction, autonomy is associated with self-determination and independence, mastery of the environment encompasses feeling competent in an environment and positive relationships with others involve satisfying and trusting relationships with other people. These six dimensions, which are independent but correlated constructs of well-being (Lopez et al., 2018), have received support in the literature (Lambert et al., 2015) and are very similar to the facets first described by Jahoda (1959). Ryff (2018b) asserted that the basis of psychological well-being is a realisation of human potential, with a focus on positive functioning.

While definitions on EWB vary, Huta and Waterman (2014) revealed four categories are evident in the majority of the definitions. These relate broadly to meaning, personal growth, excellence and autonomy (Huta, 2016). Notably, factor analysis conducted by Huta (2016) demonstrated that meaning accounts for approximately 70% of the variance in the

factor of eudaimonia and further proposed that meaning can serve as a proxy for the eudaimonic experience. Accordingly, while there are several definitions of EWB, it would appear that any appropriate measure of EWB should include reference to meaning. However, while living a meaningful life is central to EWB, it does not consider whether an individual is satisfied or even happy with such a life. SWB, on the other hand, focuses predominantly on how happy or satisfied individuals are with their current life.

#### 2.3.3. The Overlap Between Subjective and Eudaimonic Well-being

Critics have argued that there is little to no empirical distinction between subjective and eudaimonic well-being as factor analysis has demonstrated very high correlations between the constructs (Disabato et al., 2016; Goodman et al., 2017; King, 2011). However, Joshanloo (2016) argued that conducting confirmatory factor analysis does not allow for cross-loading and constrains items to a single factor, which overestimates these correlations. By employing a new method, namely, exploratory structural equation modelling (ESMS), which is appropriate for the study of multi-dimensional constructs, Joshanloo (2016) revealed that although there is a correlation between SWB and EWB, they are largely independent constructs. In contrast, Goodman et al. (2017) by using four different analytical techniques, including ESMS, found high correlations between models of EBW and SWB.

Mental well-being is a multi-dimensional construct that includes EWB and SWB. If these two constructs, as proposed by Joshanloo (2016), are empirically distinct, it is important to consider the stability of each construct, as well as how they influence each other. In a longitudinal study, Joshanloo (2019) revealed that while SWB is predictive of future levels up to 10 years, EWB is predictive up to 20 years and has more longitudinal stability than SWB. This is to be expected as EWB focuses on building a good and meaningful life, whereas SWB is influenced by emotions, which are highly variable and thus, unlikely to remain stable over a long period of time. In terms of its interaction, the findings indicated that while EWB is predictive of increases in SWB over time, increases in SWB can lead to either increases or decreases in EWB (Joshanloo, 2019). As optimal functioning, worthwhile goals and meaningful activities are central to EWB (Joshanloo, 2014), it is not surprising that SWB is the result of a good life. Conversely, SWB centres on individually defined satisfaction and positive emotions, which do not necessarily give rise to a meaningful or good life. In fact, Gruber et al. (2011) found that extended periods of intense positive affect can interfere with optimal functioning. Goodman et al. (2020) asserted that selecting specific content domains in models of well-being is dangerous as it is inherently biased. In addition, Goodman et al. (2017; 2020) indicated that whereas general,
subjectively experienced well-being is measured on a continuum from low to high well-being, EWB, as measured by researchers through specific domains, predicts well-being outcomes.

While eudaimonic and subjective perspectives on well-being cover a wide range of factors thought to be associated with a good life, the approaches do not currently allow for their convergence into a single theory of well-being. Accordingly, for the purposes of this study, well-being is considered from the subjective perspective only as the researcher was interested in the effect of the implementation of a sleep intervention on parents' subjectively experienced well-being. Well-being is thus discussed next within the context of parenthood.

## 2.4. Subjective Well-Being and Early Parenthood

A family may experience considerable changes when transitioning to parenthood and early childhood. Infancy and early childhood are characterised by substantial development for the child (Carson et al., 2018) and parents (Galdiolo & Roskam, 2012). For the purpose of this study, early childhood is conceptualised as parenting during infancy and early childhood, a period spanning from birth to five years of age.

Parenting has a considerable but complex relationship with well-being. The belief that parenthood is one of the most rewarding life experiences is common. Nonetheless, empirical studies have found that, in terms of well-being, parents of young children have the same or lower levels of well-being than their childless peers (Pollmann-Schult, 2014). Although parents may experience many challenges and responsibilities, they also find meaning and purpose through child rearing (Musick et al., 2016). There appears to be no consensus in literature regarding the effect of parenthood on SWB as a whole. The studies discussed in this section have considered SWB as the presence of life satisfaction and positive affect as well as the absence of negative affect, as originally proposed by Diener (1984). While some scholars have found a positive association between parenthood and SWB (Radó, 2020), others have revealed the opposite (Mikucka & Rizzi, 2020; Stanca, 2012). Radó (2020), by employing data from the Hungarian Turning Points of Life Course Survey, found that SWB increases after the birth of the first and second child. It is noteworthy that while women acquire both long- and short-term benefits in SWB, men only acquire short-term SWB benefits. On the contrary, Stanca (2012) demonstrated that having children decreases parental SWB when controlling for demographic and socioeconomic factors. Various conditions are associated with either an increase or decrease in SWB.

Fathers appear to experience an increase in overall SWB as a result of caregiving activities and time with children (Nelson-Coffey et al., 2019), but only in the short term

(Radó, 2020). This is likely due to the gendered nature of parenting as they are more likely to work full time and accordingly, enjoy less time with their children (Aassve et al., 2021). SWB is relatively high for married parents as well as those that are older at the birth of their first child (Nelson et al., 2014). This is likely because married parents have enhanced social support and economic security and older parents enjoy stability in their careers and family as well as emotional maturity (Nelson et al., 2014). Conversely, single mothers tend to experience a decline in SWB (Nelson-Coffey et al., 2019). Mothers who experience conflict between work and family commitments also experience a decrease in SWB (Matysiak et al., 2016). A decline in SWB tends to occur in fathers with a high level of leisure activities before the transition to parenthood (Roeters et al., 2016). Furthermore, young parents, those who are not in a partnership and those who have very young children or children with problems experience a decline in SWB (Nelson et al., 2014). In essence, this decrease in SWB seems to be associated with the considerable responsibility of childcare and resultant decreases in leisure time for both mothers and fathers.

One may conclude that parenthood is associated with both costs and benefits. Umberson et al. (2010) noted that parental well-being should be considered within specific social contexts. Depending on each family context, parenthood may be regarded as a profound stressor or important source of well-being. This concurs with SIPP theory, as suggested by Kern et al. (2020), in which social systems are emphasised in the research and practice of PP. In accordance with a PP perspective, the discussion that follows considers early parenthood and facets of SWB conceptually.

## 2.4.1. Life Satisfaction During Early Parenthood

Life satisfaction has been examined in several studies in the context of parenthood in general and early parenthood specifically. One consideration has been whether life satisfaction increases or decreases during early parenthood. Baetschmann et al. (2016) and Pollmann-Schult (2014) both used data from the German Socio-Economic Panel and found that life satisfaction increases during early parenthood. Specifically, Pollmann-Schult (2014) revealed that although parenthood has enduring positive effects on life satisfaction, this is offset by the financial and time costs associated with parenthood, which vary greatly in relation to factors such as age, employment and marital status. Baetschmann et al. (2016) similarly found during the first five years post childbirth, mothers enjoy enhanced life satisfaction even though this effect is more pronounced for planned than unplanned pregnancies and for older mothers. However, Mikucka (2016), in a longitudinal study that employed data from the Russia Longitudinal Monitoring Survey, demonstrated that while life satisfaction does not increase during the first two years after the birth of the first child, it increases after the birth of the second child. Mikucka (2016) postulated that selection to parenthood might be a contributing factor.

On the other hand, research has revealed decreases in life satisfaction during early parenthood. In a global study of over 100 countries and representing each continent, Stanca (2016) revealed life satisfaction tends to be lower for parents than non-parents, especially mothers. Furthermore, this negative association tends to be stronger in countries with a higher unemployment rate. Aassve et al. (2021) investigated 17 different domains of life satisfaction related to childbearing by employing data from the Household Income and Labour Dynamics in Australia survey and found that satisfaction with leisure, health and partner decreased after childbirth. Furthermore, Mikucka and Rizzi (2020), by using the Swiss Household Panel Data, showed that maternal life satisfaction correlated negatively with the birth of the second child, which they suggested was related to work-family conflict. Agache et al. (2014) found that paternal involvement also has an impact on life satisfaction trajectories. They accounted for the fathers' relative involvement in housework and childcare and revealed that if the fathers are involved, life satisfaction increases for both parents, with a return to baseline levels within three years. Conversely, if the fathers are less involved, life satisfaction does not increase, but rather decreases below baseline within three years after the birth of a child.

Based on the above it therefore appears that life satisfaction increases under certain conditions, for example, planned pregnancies and high paternal involvement, but decreases under other conditions, including work-family conflict and in countries with higher unemployment. These conflicting results warrant further investigation of life satisfaction during early parenthood, especially in relation to the exploration of moderating factors. It is possible that sleep, an important factor in overall parental well-being, could influence life satisfaction during early parenthood. Therefore, life satisfaction was explored in this study by employing The Satisfaction with Life Scale (Diener et al., 1985).

## 2.4.2. The Experience of Affect During Early Parenthood

Becoming a parent can be an intensely emotional experience. Veazey (2018, p. 119) asserted that it involves "complex renegotiations of the self in relation to partners, children, career, health care professionals, family, and friends." Therefore, it is expected that transitioning to parenthood may result in emotional upheaval. Research on parental affect, mostly conducted within the Western socio-cultural context and thus not necessarily generalisable to a wider global context, has revealed that parenthood increases both positive affect such as joy and overwhelming love as well as negative affect, for example, frustration

and anxiety (Kohler & Mencarini, 2016; Musick et al., 2016). As with life satisfaction, moderating factors, including gender, number of children, stress, and marital quality and status may influence affect (Aassve et al., 2012; Baranowska & Matysiak, 2011; Kohler et al., 2005; Musick et al., 2016; Nomaguchi & Milkie, 2020). Therefore, it is important to examine when and under what conditions parents experience positive and negative affect.

Nelson et al. (2014) stated that most children bring positive affect, including pride and joy, to their parents' lives. The authors suggest that positive affect results from experiences related to childhood development such as taking their first step and starting to talk. Research evidence supports this view, finding that parents experience more positive affect than non-parents, as well as during the time spent with their children than without their children (Nelson et al., 2013). When considering moderating factors, it appears that although positive affect increases after the birth of the first child, gender differences exist. Specifically, fathers tend to experience an increase only if they are in a relationship with the mother of the child. Mothers, meanwhile, experience an increase in positive affect only if it is a first child. Subsequent children do not further increase mothers' happiness (Baranowska & Matysiak, 2011; Kohler et al., 2005). In addition, increases in positive affect occur only if the partnership is stable and healthy (Aassve et al., 2012) and mothers tend to experience more intense emotions in relation to parenthood than fathers (Musick et al., 2016).

While children may elicit positive affect in parents, Nelson et al. (2014) further argued that they can also contribute to negative affect. For example, parents may experience frustration at a toddler's defiance and anxiety over the safety of their child. Moderating factors are also associated with the experience of negative affect, including gender, social class and marital status. Musick et al. (2016) found that mothers reported less happiness and more stress and fatigue than fathers. Kimbro and Schachter (2011) revealed that parents with lower socio-economic status experienced more fear, specifically related to their children's safety during outdoor play. Single mothers also perceive less happiness and more sadness than mothers who are in relationships (Meier et al., 2016) Furthermore, a recent review revealed that parenting is more stressful currently than in prior decades, and mothers are more likely to suffer feelings of anxiety, guilt, stress and depression (Nomaguchi & Milkie, 2020). Changing norms of parenting, with intensive parenting (consistent and responsive parental involvement) espoused by many modern parents has also been noted as a possible causative factor (Nomaguchi & Milkie, 2020). Veazey (2018) concurred with this view by asserting that affective experiences are shaped by discourses that advocate for intensive parenting.

In considering the affective experiences of parents during early parenthood, Veazey (2018) observed that although positive emotions such as pride and joy are often present during the birth of the child and early parenthood, this is not a universal phenomenon and the challenges of child rearing often temper positive affect. For instance, mothers may experience guilt and shame at their inability to master breastfeeding and feel terrified at the prospect of taking full responsibility for the welfare of their child. Veazey (2018) further emphasised that sleep deprivation is an almost universal experience during early parenthood and that many parents report a detriment in their ability to manage their emotions as a result. The present author suggests that, given the association between sleep and affect, interventions that potentially improve sleep warrant further investigation. During early parenthood, parents may experience both positive and negative emotions. While it is known that sleep deprivation during early parenthood has a negative influence on parental affect, there is a paucity of literature on how child sleep interventions influence parental affect. Accordingly, to examine positive affect as the presence of SWB and negative affect as an indicator of the absence of well-being, this study employed the Scale of Positive and Negative Experience (Diener et al., 2010).

## 2.4.3. Specific Factors Related to Parental Well-being

In the previous section, parental well-being was examined as the presence of three facets of SWB. In addition, perceived stress, postnatal depression (PND) and marital satisfaction as aspects of well-being were explored in this study.

**2.4.3.1. Couple Satisfaction and Well-being during Early Parenthood.** Couple satisfaction, which is central to individual and family well-being, may be broadly defined as the subjective evaluation of an individual's romantic relationship. It is an appraisal of a couple's relationship in relation to key factors such as decision-making skills, communication skills, happiness, level of connection and overall quality of the relationship (Koser, 2018; Kwok et al., 2015). For the purposes of this study, couple satisfaction is defined specifically as the subjective evaluation of the parents' romantic relationship, be it marital, cohabiting or dating.

Predictors of relationship satisfaction include effective coping styles by both partners (Falconier et al., 2015), high levels of self-regulation within the relationship, in which each partner changes or regulates their own behaviour, and low levels of negative communication from the male partner (Halford & Wilson, 2009). Relationship satisfaction appears to have a reciprocal association with depression, with discordant relationships and the dissolution of relationships associated with an increased prevalence of depression (Gabriel et al., 2010).

More specifically, PND is associated with a decrease in couple satisfaction (Garthus-Niegel et al., 2018). In addition, a higher incidence of negative interaction in a relationship may increase the incidence of depression for up to 30 months postpartum (Figueiredo et al., 2018). This is related to the context in which the relationship exists, specifically, in terms of life stressors, transitions and the birth of a child.

Apart from decreased relationship satisfaction resulting from stress and communication problems (Falconier et al., 2015), relationship satisfaction often declines with the addition of children to the home (Chong & Mickelson, 2016), largely as a result of role conflicts, restriction of freedom and the stress of caring for an infant (Ter Kuile et al., 2021; Twenge et al., 2003). Furthermore, changes in marital quality have been linked to the quality of parent-child relationships, child behaviour problems, social skills development (Hosokawa & Katsura, 2017; Malinen et al., 2010; Tavassolie et al., 2016), levels of relationship maintenance behaviour and perceived partner responsiveness (Ter Kuile et al., 2021).

A positive association has been established between relationship quality and satisfaction and well-being, with higher quality relationships linked to higher levels of wellbeing (Scabini, 2016). Research has shown that individuals in committed relationships with high levels of satisfaction experience an increase in well-being. It has been suggested that this is primarily the result of the social support received through the partnership, which leads to increased physical and emotional health as well as life satisfaction (Dush & Amato, 2005; Gómez-López et al., 2019). Cao et al. (2020) further suggested that the availability and responsiveness of partners provide a sense of security, which increases subjective wellbeing. Other factors that contribute to increased well-being in couples include economic factors such as a higher standard of living and psychological factors, for example, the sense of self-worth achieved through committed relationships (Dush & Amato, 2005; Gómez-López et al., 2019). As expected, this enhanced well-being occurs only to the extent that the partnership is mutually supportive and rewarding as discordant relationships can lead to diminished well-being. Furthermore, the dissolution of romantic relationships is associated with poor outcomes for both partners, specifically, in relation to physical and mental health (Coleman, 2011). In this study, couple satisfaction is conceptualized as an aspect of wellbeing. The Couple Satisfaction Index (Funk & Rogge, 2007) was used to measure couple satisfaction.

**2.4.3.2. Perceived Stress and Well-Being During Early Parenthood.** As couples transition to parenthood, it is important for them to adjust to several changes. These include major changes to the couple's lifestyle, sleep patterns and relationship, which could increase

their level of perceived stress. The latter may be defined as the degree to which situations are appraised as stressful, with specific consideration given to how unpredictable, uncontrollable and overloaded individuals experience their lives (Cohen et al., 1983). Perceived parental stress is related to the role of the parent as caregiver as well as the stress experienced as a result of the demands associated with parenting. Research has revealed that stress increases as a result of the daily demands placed on parents, time constraints experienced as a result of such demands, work-family conflict and relationship conflict (Nelson et al., 2014; Umberson et al., 2010) as well as role overload, interpersonal conflict and role captivity (Nomaguchi & Milkie, 2020).

Stress is greater in parents of minor children, especially during the first few years after birth (Umberson et al., 2010) and in particular for the mother (Lu, 2006). This is likely due to the intensive parenting required during infancy and the gendered nature of childrearing. For example, infants and young toddlers need frequent feeds, nappy changes and naps (this list is not exhaustive). As fathers are traditionally the breadwinners and thus, have limited time available for childcare (Aassve et al., 2021; Raley et al., 2012), mothers assume more of the burden. It also appears that fathers generally have less domestic responsibilities and more leisure time than mothers (Aassve et al., 2021). This suggests that mothers take on the increased domestic responsibilities such as extra laundry and dishes and tidying of toys associated with children. Consequently, it is not surprising that mothers experience greater stress during the first few years after birth. There are also gender differences in perceived stress during early parenthood: while mothers perceive higher levels of stress related to incompetence, role restriction, spousal relationship problems and health problems, fathers suffer higher perceived stress linked to social isolation (Widarsson et al., 2013).

Lack of sleep that results from child sleep difficulties is also associated with increased stress in parents (Epifanio et al., 2015). This, in turn, appears to be associated with concerns for the child's well-being as well as the impact it has on the daily functioning of the parents (Tsai et al., 2014). Sleep problems are most prevalent during the first two years after birth (Paavonen et al., 2020). As this coincides with early parenthood, it may explain the sleep related increase in parental perceived stress. Child sleep and its effect on parental well-being are discussed in greater depth in Chapter 3.

Research on parenting stress has revealed its consistent negative effects on mental health and marital satisfaction (Brown et al., 2020; Lu, 2006). Furthermore, a link between parental stress and depressive symptoms has also been demonstrated (Kerstis et al., 2016).

Stress is negatively associated with the SWB of parents (Sharda et al., 2019), thus affecting both life satisfaction and affect. Perceived stress and life satisfaction has been shown to be negatively correlated (Extremera, 2009; Kuang-Tsan & Fu-Yuan, 2017): specifically, parenting stress has a deleterious effect on life satisfaction (Howard, 2010; Wang et al., 2017). Furthermore, studies have revealed a significant positive association between stress and negative affect, for both daily (Scott et al., 2013) and accumulated stressors (Schilling & Diehl, 2014). Therefore, the daily stress of parenting, together with an accumulation of stress over time, may increase negative affect in parents significantly.

The relationship between positive affect and stress is more complex. Positive affect has been associated with accelerated cognitive, physiological and emotional recovery from stress (Kaczmarek et al., 2019). Moreover, a negative association has been demonstrated between positive affect and stress (Jung et al., 2010). However, positive affect does not appear to be associated with either daily (Çivitci, 2015) or accumulated stress (Schilling & Diehl, 2014). Instead, positive affect appears to have a buffering effect on the impact of stress (Ekas & Whitman, 2011), but only when individuals experience greater perceived stress (Blevins et al., 2017). Therefore, while stress associated with parenting appears to increase negative affect, positive affectivity assists in the recovery from stress if parental perceived stress is high. As parents encounter additional stressors that influence well-being (Nomaguchi & Milkie, 2020), it is important to find ways of minimising the impact of stress in order to increase parental well-being.

In essence, perceived stress tends to increase during early parenthood (Epifiano et al., 2015), influencing both life satisfaction (Extremera, 2009; Kuang-Tsan & Fu-Yuan, 2017) and affect (Jung et al., 2010). Consequently, perceived stress has a negative effect on SWB during early parenthood. Therefore, the Perceived Stress Scale (Cohen et al., 1983) was employed to examine perceived stress as an indicator of the absence of well-being in this study.

#### 2.4.3.3. Postnatal Depression and Well-Being during Early Parenthood.

Although transitioning to parenthood can be incredibly rewarding and meaningful, it is woven with challenges of learning new skills and adapting to a major life event. Some parents experience this transition as rife with fatigue, frustration and emotional upheaval (Corrigan et al., 2015). PND is a form of depression that can occur after the birth of a child and affect both mothers and fathers (Latha et al., 2016). PND, which is characterised by typical symptoms of depression, including appetite and sleep disturbances, loss of libido, fatigue, persistent sadness, irritability and guilt (Latha et al., 2016), has a negative impact on the

parent's ability to cope with the daily tasks of child rearing. Although the Diagnostic and Statistical Manual of Mental Disorders, 5<sup>th</sup> Edition (DSM-5) specifies onset to be within four weeks after birth for a diagnosis of PND to be made, researchers have argued that this short period excludes mood disturbances that are associated with postnatal onset and therefore, should be extended up to three months (Cuijpers et al., 2008), six months (Sharma & Mazmanian, 2014) or even up to one year after birth (Epifanio et al., 2015).

In relation to aetiology, it seems that parents' and in particular, mothers' personal approach to parenthood (assuming either a controlled or relaxed approach) plays a major role in their emotional experiences, which, in turn, affects maternal well-being (Haga et al., 2012). This concurs with Knudson-Martin and Silverstein's (2009) qualitative meta-analysis of PND, which found that the construction of motherhood and feelings of incompetence are associated with PND. The meta-analysis identified relational processes within which PND occurs, specifically related to the social construction of motherhood as a positive experience where mothers are capable of taking care of their children. As a result of this conceptualisation of what it means to be a *good mother*, mothers cannot express negative feelings relating to child-rearing, for fear of being judged or shamed. This leads to feelings of isolation, incompetence, anxiety, guilt and shame, which ultimately result in despair. Guilt has been reported for a number of facets, ranging from feeling guilty because they are sad, to feeling guilty because they are unable to adequately care for their child.

The aetiology of paternal PND is not socially constructed, but instead appears to result either directly from, amongst others, infant sleep problems, lack of social support, stress, poor economic circumstances, prior history of depression, being unmarried and not having paternity leave (Kamalifard et al., 2014; Philpott & Corcoran, 2017), and indirectly through the support of a partner with PND (Letourneau et al., 2012). Fathers with PND have related feeling overwhelmed, isolated, frustrated, confused and helpless, and often fear stigmatization (Letrouneau et al., 2012). In this regard, stigmatization relates to mental health as opposed to any conceptualisations of parenthood.

Research has shown the prevalence of depressive symptoms during early parenthood ranges between 5% and 20% for mothers and 3% and 10% for fathers of highincome countries (Kerstis et al., 2016), and between 20% and 30% for mothers (Verkuijl et al., 2014) and up to 25% for fathers (Biebel & Alikhan, 2016) in low to mid-income countries. There is a strong correlation between paternal PND and maternal PND, which has important implications for family health and well-being (Goodman, 2004; Philpott & Corcoran, 2017). While fathers with PND as well as those that are not involved in childrearing, thus increasing the responsibilities of the mother, increase the risk of PND in mothers, healthy and supportive fathers act as a protective factor against PND for mothers. Equally, a higher incidence of maternal PND is positively associated with an increased risk for paternal PND (Epifanio et al., 2015).

PND in parents can be detrimental to the development of children and has been linked to an increased risk of under-nutrition, stunted growth and behavioural and emotional problems (Avan et al., 2010; Netsi et al., 2018). These findings highlight the importance of parental mental health as a contributor to children's healthy development. PND also has important implications for parental well-being. The diminished positive affect and increased experience of negative affect characteristic of depression may lower experiences of SWB in parents. Furthermore, PND is negatively associated with life satisfaction (Badr et al., 2021; Munaf & Siddiqui, 2013). It is, therefore, important to examine methods of ameliorating the impact of PND on parental well-being in order to ensure healthy family functioning. In the current study, the presence of PND, which is viewed as reflecting the absence of well-being, was measured by employing the Edinburgh Postnatal Depression Scale (Cox et al., 1987).

## 2.5. Operationalizing Parental Well-being in of the Current Study

Parental well-being is a complex construct and has been defined from the perspective of both hedonic and eudaimonic well-being. While eudaimonic definitions include a sense of meaning and accomplishment derived from parenthood (Lauinger, 2015), hedonic definitions encompass satisfaction with one's role as caregiver, coping strategies, perceived support and affect (Piehler et al., 2014). For the purposes of this study, parental well-being is viewed from the hedonic, subjective perspective, thus focusing on life satisfaction and affect. Therefore, parental well-being is viewed as the presence of positive affect, low levels of negative affect and moderate to high levels of life satisfaction. An additional three facets of well-being specific to early parenthood have been included in this operationalization: couple satisfaction, PND and perceived stress. Specifically, the presence of perceived stress and PND was examined to shed light on the absence of well-being. Furthermore, higher levels of couples' satisfaction were explored to understand the presence of well-being.

## 2.6. Conclusion

In this chapter, an overview of PP and well-being was provided, with a specific focus on parental well-being. PP as an emerging field in psychology redresses the imbalance of the previous decades of pathological focus, and continues to do so. SWPP has realised a more holistic understanding of human experience because it focuses on how both the positive and negative can contribute to individuals' overall well-being and flourishing. Although considerable progress has been made in relation to the theoretical conceptualisation of well-being, a comprehensive and accepted approach that incorporates both subjective and eudaimonic well-being is still required. The literature has revealed that parents' overall well-being is affected immensely by children, especially with regards to stress, affect and couple satisfaction. The well-being of parents reciprocally affects the well-being of children. Given that stress and negative affect tend to increase and life and couple satisfaction tend to decrease with the addition of children to the family, it is necessary to consider how the well-being of parents can be improved. Accordingly, and in line with PP principles, it is crucial to explore ways of nurturing parental well-being so as to address the overall costs of parenting, which have been described in this chapter. One of the biggest changes associated with parenting is a disruption of sleep patterns. Consequently, the impact of infant and toddler sleep problems on parental well-being is discussed in Chapter 3.

#### **Chapter 3: Child Sleep Interventions and Parental Well-being**

## 3.1. Introduction

Sufficient sleep is a crucial component of an individual's ability to function effectively on a daily basis (Davidson et al., 2019). Due to infant sleep patterns, transitioning to parenthood leads to alterations to established parental sleep. Infants' sleep patterns gradually affect other areas of parental functioning as well. For example, poor sleep has been associated with poor health (Touitou et al., 2017) and adverse psychological consequences (Campbell et al., 2018), which, in turn, have a potentially deleterious effect on child and parental well-being. As children's sleep can have a substantial influence on family functioning and well-being, child sleep patterns are first discussed in this chapter. Consideration is subsequently given to factors that influence such sleep patterns, with a specific focus on parenting factors and child development. Furthermore, sleep problems are defined and their effect on both child and parental well-being discussed. As a method of ameliorating child sleep problems, sleep interventions are described and criticism against the use of such interventions are considered. Finally, the influence of sleep interventions on parental well-being are examined and the purpose of the present study provided.

#### 3.2. Infant and Toddler Sleep Patterns

Infant sleep patterns change considerably during the first 12 months of life. Although there is considerable individual variability, studies have revealed that in a 24-hour period infants sleep in approximately three-hour cycles during their first two months, with at least three night-wakings each night. By the age of 12 months, infants sleep mainly during the night for approximately four- to five-hour cycles, with between one and three night-time wakings (Burnham et al., 2002; Huang et al., 2016; Mindell et al., 2016; Paavonen et al., 2020). Although infants' circadian system matures when they are approximately three months of age, their rapid eye movement (REM) and non-rapid eye movement (NREM) sleep states only develop when they are approximately six months of age and when sufficient neural maturation has occurred (Hiscock & Davey, 2018). At this age, healthy fullterm infants should be able to maintain longer periods of consolidated sleep. Caregiver reports have shown that consolidation of sleep only begins when infants are seven months or older, with longer sleep periods after 10 months (Mindell et al., 2016). In addition, there is a marked improvement in night-wakings in their second year (Paavonen et al., 2020). Nevertheless, between the ages of one and two years, children can still wake up more than twice a night (Galland et al., 2012; Paavonen et al., 2020). It appears that self-regulation, where the infants return to sleep unaided by parents or caregivers, is not common during their first two years of life. Approximately 50% of children develop this ability by 18 months

(Paavonen et al., 2020). While there appears to be great variability in sleep onset latency (SOL) or the length of time they take to fall asleep initially, SOL can take up to approximately 40 minutes when infants are three months old, approximately 25 minutes when infants are 6 months old, approximately 20 minutes between the ages of 8 and 18 months, and approximately 25 minutes when infants are 24 months old (Paavonen et al., 2020).

A systematic review of the literature has revealed that there is a paucity of research on toddler sleep patterns (Galland et al., 2012). In an internet-based study, Sadeh et al. (2009) revealed that the night-time sleep of two- to three-year-old children did not differ significantly from those between six and 11 months of age. This concurred with Tikotzky and Shaashua (2012) who found the average number of night-wakings of pre-schoolers was about three times per night, even though the children did not necessarily signal their parents for attention or assistance to return to sleep. Mindell et al. (2016) revealed that median nighttime sleep decreased slightly after 16 months, possibly because in a 24-hour period older children experience a decrease in total sleep time. While SOL averages 17 minutes for three- to five-year-old children, total sleep duration steadily decreases between the ages of two and five years (Galland et al., 2012).

It is noteworthy that there are cultural differences in sleep patterns: young children from predominantly Asian countries, African American children and Hispanic children have significantly later bedtimes and shorter total sleep times in comparison to those from Caucasian countries (Bathory & Tomopoulos, 2017; Mindell, Sadeh, Wiegand, et al., 2010). In addition, geographical location appears to contribute to sleep patterns in that children from urban areas tend to have shorter total sleep duration than those from areas that are less urban (Bottino et al., 2012). However, to the best of the researcher's knowledge, no study has been been conducted in Africa or employed an African population. It is further important to note that research into child sleep has predominantly been conducted in Western sociocultural contexts, despite the fact that sleep practices differ for the majority of cultures globally (Ball et al., 2019). Unless specified otherwise, the research referred to in the following sections therefore largely applies to Western models of infant care.

## 3.3. Factors Influencing Sleep Patterns

Several factors influence sleep patterns in a complex and often reciprocal manner. Infant development and parental factors contribute notably to disruptions in children's sleep patterns, which, in turn, have a negative impact on adults' sleep patterns. While infant development includes physical and psychological milestones as well as the ability to selfregulate, parental factors encompass behavioural and psychological processes and decisions related to the sleep environment and routines.

#### 3.3.1. Parental Behaviours

Two parenting behaviours have a direct impact on child sleep patterns: parental involvement and feeding. In a large cross-cultural study of infant sleep, Mindell, Sadeh, Kohyama et al. (2010) revealed that the most common parenting behaviours at bedtime include parental presence, feeding to sleep, which encompasses bottle feeding and breastfeeding, and holding or rocking the child to sleep. The common behaviours during night-wakings comprise feeding, rubbing or patting the child and holding or rocking the child back to sleep.

Research has demonstrated that parental involvement or presence at sleep time is directly associated with increased sleep disruptions in children (Burnham et al., 2002; Mindell, Sadeh, Kohyama, et al., 2010; Sadeh et al., 2009; Sadeh et al., 2010), which have a deleterious effect on parental sleep. Parental involvement encompasses the presence of a parent at sleep onset, holding or rocking a child to sleep, responding immediately and consistently to a child's signals during night-wakings and excessive active physical comforting during night-wakings. If parents are present until their child falls asleep or hold, rock or rub their child to sleep, both initially and during night-wakings, an association between parental presence/behaviour and sleep onset may be formed. Conversely, Paavonen et al. (2020) found that longer parental response times when infants signal at night are associated with higher levels of self-regulation when children are 12 months old.

With regard to feeding, research has shown that breastfeeding, especially at night, is significantly associated with frequent night-wakings and thus, shorter total sleep duration (Galland et al., 2012; Nakagawa et al., 2021; Sadeh et al., 2009). Breast milk digests faster than formula milk and therefore, infants require more frequent feedings. Consequently, infants wake up more often during the night and subsequently experience shorter total sleep duration, particularly if breastfeeding occurs later in childhood (Nakagawa et al., 2021; Touchette et al., 2005). Bottle feeding has similarly been associated with more frequent night-wakings (Mindell, Sadeh, Kohyama, et al., 2010) as infants associate feeding with sleep onset or use it as a soothing method to initiate sleep (Sadeh et al., 2010).

#### 3.3.2. Parental Cognitions

Parental sleep-related cognitions include expectations, thoughts and beliefs about children's sleep. Research has suggested that important links exist between sleep-related

cognitions and child sleep patterns. Sleep-related cognitions affect sleep patterns through the mediation of parental involvement or behaviour towards the child. Studies have confirmed that doubts about managing infant sleep, limiting bedtime involvement and anger at infants' demands regarding sleep are associated with disrupted sleep patterns (Knappe et al., 2020; Levin & Scher, 2016; Sadeh et al., 2007). In addition, general child-related parental cognitions such as rejection of the child are also associated with disrupted sleep patterns (Knappe et al., 2020). Tikotzky and Shaashua (2012) confirmed that maternal cognitions related to the limiting of parental night-time involvement are one of the most significant predictors of fragmented infant sleep and are associated with more frequent nightwakings among four-year-olds. In other words, if mothers believe they should soothe their infants to sleep, they exhibit high parental involvement at sleep onset. This pattern, with associated disrupted sleep patterns, continues when their children are toddlers and of preschool age. It is noteworthy that fathers also play a vital role in maintaining normal sleep patterns. Sadeh et al. (2007) found that paternal problems with limiting night-time involvement are linked to increased infant night-wakings, independently of maternal cognitions.

Furthermore, studies have revealed that maternal cognitions related to concerns about a child's distress during night-wakings are associated with disturbed sleep (Levin & Scher, 2016; Tikotzky & Sadeh, 2009). In other words, if a mother believes that her child is signalling out of anxiety or distress, she is more likely to soothe the infant back to sleep, which, in turn, disrupts sleep patterns through excessive parental involvement. This finding predicted and was associated with more night-wakings until children were one year of age (Tikotzky & Sadeh, 2009) and with child sleep problems until they were four years old (Levin & Scher, 2016).

Of importance, Hall et al. (2017) linked parental cognitions, specifically limiting bedtime involvement, doubts about managing infant sleep and anger about infant sleep requirements to depression in both fathers and mothers. Therefore, such cognitions not only affect child sleep patterns, but also parents' mental health. However, as discussed in the following section, parental mental health and child sleep patterns have a bidirectional relationship.

#### 3.3.3. Parental Mental Health and Affect

There is increasing evidence that maternal anxiety and depression have an adverse effect on overall child development (Netsi et al., 2018), and sleep is not an exception. Parental affect and mental health, specifically anxiety and depression, can affect child sleep

patterns negatively. Anxiety and mood disorders during pregnancy and postnatally have been linked to disrupted infant and toddler sleep (Field et al., 2007). Depression, in particular, has a strong link to disrupted sleep patterns. Studies have found that maternal prenatal depression is associated with disrupted sleep in children up to three and a half years of age (Toffol et al., 2019). Furthermore, maternal postnatal depression is associated with numerous night-wakings in infants as old as nine months (Gress-Smith et al., 2012) and twelve months of age (Pinheiro et al., 2011). Taylor et al. (2017) confirmed that postnatal depression is associated with an increased risk of disrupted sleep in 16- to 18-year-olds (Taylor et al., 2017), which suggests that in addition to the deleterious consequences of poor sleep on mothers, maternal PND can have an impact on children's sleep until they are almost to adulthood. Therefore, it appears that anxious and depressed mothers, both preand postnatally, are at increased risk of having children with sleep problems.

Parental affect also plays a pivotal role in the disruption of sleep patterns. As noted previously, negative emotions such as anger towards an infant's sleep requirements are related to increased sleep disruptions (Levin & Scher, 2016; Sadeh et al., 2007) as well as parental anxiety and stress (Caldwell & Redeker, 2016). It is noteworthy that positive parental emotions can also disrupt sleep. Specifically, while positive emotions during interactive play have been associated with poorer infant sleep, high availability and tolerance for night-wakings are involved in the maintenance of parental presence, which similarly disrupts infant sleep (Sadeh et al., 2009). This availability and tolerance for night-wakings partially influence the sleep environment, which is discussed subsequently.

#### 3.3.4. Sleep Environment and Bedtime Routine

One of the decisions new parents are required to make involves the location and environment in which their child will sleep. Parents have several alternatives, including cosleeping, that is, sharing a bed or other sleep surface with the child, room-sharing in which the parents share a room with the child but sleep on different surfaces, or putting the child in a separate room. Although many parents prefer to share a room with their infant, at least initially, this is dependent on cultural differences. For instance, although Caucasian children tend to share their parents' room for their first few months, the incidence of room-sharing decreases with age (Mindell, Sadeh, Wiegand et al., 2010). There appears to be a greater prevalence of co-sleeping in non-Western countries and cultures (Chen et al., 2021). Literature has revealed that co-sleeping may be a factor in poor infant sleep as co-sleeping mothers have reported more infant night-wakings than mothers of solitary sleeping infants (Touchette et al., 2005; Volkovich et al., 2015), although this might simply be because mothers of solitary sleeping infants are not as aware of their children's sleep patterns. Furthermore, Bagley et al. (2015) noted that environmental conditions such as noise and room temperature are associated with poor child sleep.

The child's bedtime routine is equally important. In this regard, a bedtime routine may be defined as a daily family routine that comprises "parents engaging their child in the same activities in the same order on a nightly basis prior to lights out" (Mindell et al., 2015, p. 717). These activities should be classified as quiet and not excite or over-stimulate the child. Although there is variety in relation to family preferences, a bedtime routine usually includes a bath and/or brushing of teeth, followed by reading, singing, or story-telling. Several studies have confirmed that regular bedtime routines are associated with enhanced child sleep guality and duration (Covington et al., 2019; Mindell, Sadeh, Kohyama, et al. 2010; Mindell & Williamson, 2018; Sadeh et al., 2009). In a large global and culturally diverse study, Mindell et al. (2015) revealed that a consistent bedtime routine was associated with earlier bedtimes, shorter SOL, fewer and shorter night-wakings and more total night-time sleep. They further demonstrated the importance of regular bedtime routines as the frequency of implemented bedtime routines per week was positively associated with overall improved quality and quantity of child sleep patterns. Mindell et al. (2015) theorised that bedtime routines are beneficial in the reduction of bedtime stress and physiological arousal and more importantly, are indicative of healthier parental management of sleep practices.

#### 3.3.5. Developmental Milestones

Developmental milestones such as attachment and object permanence are important contributors to sleep patterns. Infants form an attachment to their primary caregivers through underlying psychological and biological processes that are necessary for survival. This attachment is usually established before the end of their first year. Moreover, they suffer anxiety when separated from their caregivers (Bowlby, 1969). The expectation that a child should sleep in a dark and separate room, away from their primary caregivers as often expected in Western societies, can be challenging for some infants (Sadeh et al., 2009). When infants develop an understanding of object permanence, at approximately six to eight months of age, they may experience separation anxiety from their primary caregivers when proximity to the attachment figure is not maintained. This can potentially lead to increased sleep disruptions. Bathory and Tomopoulos (2017) noted that these disruptions, which peak anytime between six and 18 months of age, usually take the form of experiencing difficulty separating from a parent at bedtime and signalling or seeking comfort during night-wakings. While it was initially thought that dependency on the caregiver rather than secure attachment has an effect on child sleep (Bélanger et al., 2014; Scher & Asher, 2004), recent evidence has indicated that secure attachment is associated with enhanced child sleep, independently from child dependency (Bélanger et al., 2015). In addition, studies have found that insecureresistant infants tend to experience more night-wakings (Simard et al., 2017). The discrepancy in findings may be due to differences in methodology: initial studies utilised maternal reports, which are subject to bias, and samples were skewed towards securely attached children.

It is of interest that separation anxiety in relation to mothers has been linked to poor infant sleep as anxious mothers experience difficulties limiting bedtime involvement. George and Solomon (1996) theorised that a parental caregiving system, which is separate from attachment, activates and produces anxiety when mothers are separated from their child. Maternal separation anxiety has been defined as an unpleasant emotional state involving guilt, worry and sadness subsequent to being separated from the child, and maternal perceptions regarding her infant's reaction to separation (Volkovich et al., 2018). This anxiety is thus produced through night-time separation as well and has been positively associated with oversensitivity to a child's signalling (Hsu, 2004; Volkovich et al., 2018), physical proximity at bedtime and difficulty limiting bedtime and night-time involvement (Scher, 2008; Volkovich et al., 2018). Thus, while dependency on the part of the child may influence sleep patterns, separation anxiety in relation to the mother is associated with parental behaviours and cognitions that affect infant sleep patterns.

The ability to settle back to sleep independently is a developmental ability that has been shown to affect sleep considerably. Accordingly, it is discussed next.

#### 3.3.6. Ability to Self-regulate

The ability to self-regulate arousal states, which is referred to in the vernacular as self-soothing, is necessary for the development of healthy sleep patterns. Despite its importance for healthy sleep, few studies have focused on infant self-regulation and sleep. Broadly, self-regulation refers to the ability to control one's actions, emotions and thoughts in a variety of situations (Williams et al., 2016). More specifically, self-regulation as it relates to sleep is the ability of a child to modulate arousal states without parental presence (Burnham et al., 2002). This may include settling to sleep at the beginning of the night and during night-wakings without parental presence and moving from a crying to a quiet wakeful state without parental presence (Burnham et al., 2002). This ability to self-regulate does not appear at birth, but develops as the child grows (Miller et al., 2015). During the first three months, infants tend to fall asleep after a feed. Between four and six months of age, self-regulation appears in some infants and increases in frequency as the child ages (Burnham et al., 2002). It appears that while some children develop the ability to self-regulate, others do not

develop such. Furthermore, those that develop the ability to self-regulate are considered better sleepers by their parents. Although poor self-regulation has been associated with child sleep problems (Williams et al., 2016), this relationship appears to be reciprocal as poor sleep influences the ability to develop self-regulation (Williams et al., 2017). In addition, a lowered ability to self-regulate is associated with parent reports of more night-wakings and longer SOL (Sadeh et al., 2010). It is important to note that although self-regulating infants still experience night-wakings, they do not signal their parents for assistance, but return to sleep without parental involvement. In contrast, non-self-regulating infants signal their parents for assistance and thus, their parents are more aware of and present during night-wakings.

Goodlin-Jones et al. (2001) confirmed that non-self-regulating infants spend more time out of their cribs than self-regulating infants. However, it is unclear whether the infants were removed from their cribs so that they could be soothed back to sleep or whether removing them from their cribs resulted in their inability to self-regulate. Further, non-selfregulating infants are already asleep when they are placed in their cribs as opposed to selfregulating infants who are drowsy but awake when placed in their cribs (Burnham et al., 2002). The reciprocal nature of child sleep and self-regulation (Williams et al., 2017) suggests that infants with poor sleep have delayed self-regulatory skills development. Thus, they are not afforded the opportunity to improve sleep, which, in turn, influences parental behaviour and necessitates higher parental involvement at bedtime. It thus appears that the association between parental presence at bedtime requires parental presence during nightwakings. Moreover, such infants are then unable to develop self-regulatory skills because of parental involvement. As noted previously, parental presence or involvement at night-time is directly associated with increased sleep disruptions in children. Therefore, it is important that parents afford their infants the opportunity to learn self-regulatory skills by not responding immediately to signals during the night.

It is also essential to examine the complexity and bidirectional nature of parent-child interactions. Certain infants struggle to endure separation from their caregivers and are highly emotional when requesting proximity. It is possible that such infants, especially those lacking secure attachment, experience difficulty managing without parental presence or assistance during bedtime and night-wakings. The inability to self-regulate creates a demand for parental presence during night-wakings. This is compounded if parental cognitions include a belief that night-time involvement is necessary, thus further reinforcing the expectation of parental presence. Research has indicated that maternal cognitions related to immediate responses to a child's signals are positively associated with infant night-wakings (Galbally et al., 2018). Therefore, one may infer that it is not just parental involvement that creates a lack of self-regulation in children, but, inversely, non-self-regulating infants that require more parental involvement. This lack of self-regulation can result in infants signalling their parents often throughout the night, and many parents perceive recurrent night-wakings to be problematic.

In essence, while most infants are developmentally capable of consolidated nighttime sleep from approximately six months of age (Vriend & Corkum, 2011), several factors influence whether they will be able to achieve this. Various parental factors, including excessive parental involvement, parental separation anxiety and unnecessary feeding have a deleterious effect on child sleep patterns. Furthermore, parental cognitions regarding infant sleep, decisions related to the sleep environment and bedtime routine, and parents' mental health further influence whether infants will realise or maintain consolidated night-time sleep. Finally, infant development contributes to sleep patterns through milestones such as attachment, object permanence and notably, the ability to self-regulate. The exact nature of sleep problems is discussed in the next section.

## 3.4. Defining Sleep Problems

As noted previously, many factors can disturb sleep patterns. The mechanism of action is primarily their impact on natural physiological arousals between sleep cycles that are characteristic of night-time sleep. These arousals can be disruptive if a child does not move into the next sleep cycle independently (Bathory & Tomopoulos, 2017). Children who return to sleep unaided between sleep cycles are known as self-regulators and are more likely to fall asleep faster and without signalling to parents, thus allowing for consolidated night-time sleep. Therefore, the child's ability to self-regulate determines whether the frequency of night-time wakings will become problematic (Galland et al., 2012).

Since information related to sleep patterns is derived primarily from parent reports, most studies have employed criteria that resemble, but are slightly different from clinical definitions. Researchers have been known to use a priori definitions may use a priori definitions, such as waking for periods longer than 30 minutes more than three times a week, or rely on comparisons with population norms (Owens, 2008). Using data from two large birth cohorts, Paavonen et al. (2020) suggested the following parameters for defining sleep problems: a SOL at bedtime of at least 30 minutes, resettling SOL during the night of at least 20 minutes and night wakings that require resettling at least twice a night for 18- to 24-month-old children or more for younger infants between three and 12 months of age. Although most researchers have employed parental information to define sleep problems

(Mindell et al., 2006), such definitions of sleep problems are subjective and may be influenced by several factors, including culture, education level and parenting styles. For example, while some parents may experience distress if their infant has a SOL of more than 20 minutes, others may only become distressed after 40 minutes. Cultural differences have a significant effect on sleep practices such as co-sleeping and transitional objects as well as how parents define a sleep problem (Mindell et al., 2006). Parents from predominantly Asian countries exhibit increased perceptions of sleep problems and are more likely to co-sleep or share a room with their children than those from predominantly Caucasian countries (Mindell, Sadeh, Wiegand, et al., 2010). Parental education has an influence on expectations regarding developmentally appropriate sleep for infants and toddlers. If parents, through lack of knowledge, expect young infants to have long periods of consolidated night-time sleep, they are likely to classify typical sleep patterns as problematic. Therefore, parental education is imperative in moderating expectations regarding infant sleep. Finally, parenting style affects both expectations and experiences, for example, through permissive parents having difficulty with limit setting.

Accordingly, researchers have often defined infant and toddler sleep problems as parent-reported long SOL, frequent night-wakings and short consolidated night-time sleep (Field, 2017). It is noteworthy that most definitions include some reference to frequency (number of episodes), severity (duration of episodes) and chronicity (weeks to months) of the problematic behaviours (Mindell et al., 2006). The most common sleep problems parents have reported include difficulties with settling to sleep and night-time waking, which affect approximately 30% to 45% of children younger than one year (Paavonen et al., 2020; Price et al., 2012) and between 20% to 30% of one- to five-year-old children (Mindell et al., 2006; Paavonen et al., 2020; Ramchandani et al., 2000). For the purpose of this study, sleep problems are defined as parentally determined sleep disturbance in young children, with consideration given to age-appropriate sleep and feeding requirements.

In relation to overall well-being, children and parents suffer several deleterious consequences because of poor infant sleep. In a bidirectional manner, parents experience poor sleep and/or fatigue because poor child sleep problems result in poor sleep or fatigue in parents. This further influences their role as caregivers as fatigue has an adverse impact on how parents are able to care for and interact with their children adequately (Giallo et al., 2011). Therefore, it is important to shed light on how insufficient sleep affects both adults and children and determine ways of ameliorating any deleterious consequences.

#### 3.5. The Consequences of Child Sleep Problems on Parental Well-being

Fragmented sleep has far-reaching consequences for parents in relation to, amongst others, cognition, relationships, mood, affect and stress. It is recommended that adults have seven hours of good quality, appropriately timed and regular sleep, with the absence of sleep disturbances or disorders (Watson et al., 2015). Because of the difference between infant and adult sleep patterns, parental sleep may be disturbed, which is exacerbated if children suffer sleep problems. The effect of fragmented sleep on several functions and processes as well as how these processes and functions interact and influence one another are subsequently discussed.

#### 3.5.1. Impairment in Cognitive Functioning

Cognition, which is an important part of everyday functioning, includes processes such as learning, problem-solving, planning, memory and decision-making. These processes are essential for parenting practices, for example, learning children's food preferences, planning meals and activities, remembering health care appointments and making decisions regarding their sleep location. Sleep occurs in different stages. Furthermore, critical neurological processes characterise specific sleep states. In a comprehensive report on the impact of sleep deprivation on cognitive functioning, Waters and Bucks (2011) described several facets of cognition that are impaired by sleep loss. Specifically, reaction time, attention and vigilance, and problem-solving and planning abilities decrease; short-term and working memory are influenced, as is memory for new skills and the recall of consolidated memories; inhibition and social cognition, which comprise emotional decision-making, social and interpersonal functioning, and moral judgement, are reduced; and sleep deprivation leads to less mental flexibility. These cognitive functions are important for caregiving practices. In spite of this, due to impaired cognitive abilities, parenting abilities in general might be compromised. In accordance with this, Hiscock and Fisher (2015) stated that mothers of infants with sleep problems have clinically significant compromised functional efficiency. For example, a tired mother may forget to feed her infant or make poor decisions in relation to her child's safety. Giallo et al. (2011) revealed that fatigue may result in hostile parenting behaviours, thus influencing the parent-child relationship. In addition to the parentchild relationship, parental relationships can also be affected by loss of sleep.

#### 3.5.2. Strain on the Parental Relationship

The birth of a child results in considerable reconstruction of the family unit, with new responsibilities, demands and changes in habitual patterns required. A review conducted by Kluwer (2010) revealed the marital changes during the transition to parenthood. One of the most prominent changes is the decline of marital satisfaction and quality after childbirth. This

decrease in marital satisfaction appears to be more significant for women, which may be attributed to the increased restriction of freedom, demands on time and parental responsibilities. This is most evident during infancy when demands are high. Kluwer (2010) further reported that conflict and disagreements increase after the transition to parenthood. These conflicts are primarily related to the division of household labour, amount of time parents spend together, how leisure time is spent, physical and emotional intimacy, and work responsibilities. While Kluwer's (2010) review focused on the transition to parenthood and although some of the studies noted changes in sleep patterns, the review did not concentrate on child sleep problems and more specifically, the effect of sleep deprivation and fatigue on the couple's relationship.

On the other hand, Ter Kuile et al. (2021) indicated that relationship satisfaction does not decline for most couples after childbirth, at least within low-risk populations. Rather, small groups of parents experience significant declines, which partially result from prenatal relational processes. Specifically, parents with lower prenatal relationship maintenance behaviour, perceived responsiveness and accommodation are more likely to experience a considerable decrease in satisfaction after the birth of their child. This may be due to the buffering effects of relational resources, including feeling cared for and understood by a partner during times of stress such as the transition to parenthood. While reference is made to marital satisfaction as it is referred to in specific research, it is acknowledged that not all parents are married. Hence, instead, couple or relationship satisfaction is used interchangeably throughout this thesis.

As noted previously, sleep deprivation has an impact on social cognition and inhibition and reduces empathic accuracy and emotion recognition (Gordon & Chen, 2014). Over and above the increases in conflict as a result of new parenting roles, fatigued parents' lowered social cognition, reduced inhibition and reduced empathy can lead to increased hostility and interpersonal conflict. Studies that have revealed the effect of poor sleep on relationship quality and satisfaction have further demonstrated that infant sleep problems are associated with increased relationship stress (Hiscock & Fisher, 2015; Smart & Hiscock, 2007) and decreased relationship quality and satisfaction (Peltz et al., 2016). Although both mothers and fathers experience higher levels of relationship dissatisfaction than those of children without sleep problems (Meijer & van den Wittenboer, 2007; Peltz et al., 2016), this effect is more prominent in mothers, possibly because of their greater engagement in childcare (Ricci et al., 2020). One may deduce that sleep problems are detrimental to parental relationships, over and above the effects of changes on the family structure. Because this increase in interpersonal conflict can lead to a breakdown in a family, it is

imperative to determine ways of diminishing the effect of sleep problems on relationship quality and satisfaction. If child sleep problems are reduced, parental sleep can be improved and accordingly, relationship satisfaction increased.

#### 3.5.3. Adverse Impact on Affect and Mood

Sleep problems in children compound the repercussions of sleep loss on mood and affect. Positive and negative affect are impacted in that loss of sleep leads to greater negative affect, specifically anger, and decreased positive affect (Gordon & Chen, 2014). Mothers experience a higher incidence of clinical levels of irritability (Hiscock & Fisher, 2015) and anxiety (Okun et al., 2018) as a result of fragmented sleep. As noted in Chapter 2, the presence of positive affect and absence of negative affect are important for subjective well-being (SWB). Therefore, sleep deprivation, in decreasing and increasing positive and negative affect, respectively, impinges on parental SWB.

Insufficient sleep affects mood severely in that depression and total mood disturbance increase with sleep deprivation, especially in younger adults (Schwarz et al., 2019). Studies have confirmed that less than six hours of parental sleep in a 24-hour period, fatigue and frequent night-wakings of three or more times per night are associated with the onset of depressive symptoms in parents (Giallo et al., 2011; Pemberton & Tyszkiewicz, 2016). Furthermore, infant sleep problems are associated with higher maternal depression scores (Hall et al., 2017; Hiscock & Fisher, 2015; Okun et al., 2018), especially those with no history of depression (Martin et al., 2007). The association between maternal PND and infant sleep problems, which has been well documented, can persist between one (Okun et al., 2018) and four years postpartum (Giallo et al., 2011).

Although less well documented, fathers of infants with sleep problems can also experience high levels of depression (Field, 2018; Hall et al., 2017; Hiscock & Fisher, 2015), with a prevalence of up to 25% (Biebel & Alikhan, 2016). However, it appears that this is true only for fathers of children under the age of two years (Martin et al., 2007), possibly because they are required to be more involved in childrearing during the the infancy stage, which is marked by high demand. Paternal depression has been associated with negative parenting as well as behavioural problems and developmental delays in infants (Field, 2018). These consequences do not appear to be as a result of heredity as both biological and adopted children are affected by paternal PND.

While both parents are affected by the addition of a child to the family unit and concomitant disruptions to sleep, it appears that maternal mood is more profoundly impacted

and for longer periods than paternal mood. As both maternal and paternal PND appears to have adverse consequences for child development and decreases parental well-being, it is imperative to investigate methods of reducing parental PND. Since infant sleep problems are directly linked to parental PND, reducing infant sleep problems may decrease the potential risk for mood disorders

## 3.5.4. Increase in Perceived Stress

The transition to parenthood requires adaptation and includes conditions that generate stress and emotional upheaval. Household chaos, increased parenting responsibilities and parenting hassles, children that misbehave and lack of social support are examples of the common stressors that parents endure (McQuillan et al., 2019). In addition to the required readjustments and increased responsibilities, fatigue and sleep disturbance have been associated with increases in parenting stress (Giallo et al., 2011; Hall et al., 2017; Wake et al., 2006) as more demands are placed on fatigued parents. Similar to mood, mothers appear to experience a higher incidence of overall parenting stress than fathers (Epifanio et al., 2015; Smart & Hiscock, 2007). The possible reason thereof is that in most societies, women are still considered the primary caregivers and cultural expectations burden them with childrearing and household duties, including putting children to bed, providing night feeds (breastfeeding or formula) and settling children after night-wakings, all of which contribute to poor sleep. In addition, poor sleep has been linked to impaired hypothalamic-pituitary-adrenal (HPA) axis regulation, the system believed to be responsible for physiological stress responses (Tsai et al., 2019). This dysregulation results, amongst others, in changes to the secretion of the stress hormone cortisol (Pejovic et al., 2013). As a result of child sleep problems and children's concomitant signalling throughout the night, parental sleep is disturbed, thus potentially leading to impaired HPA-axis regulation and thus, increased perceived stress.

Mikolajczak et al. (2018) concluded that parental burnout is a condition associated with enduring exposure to chronic parenting stress, which is characterised by overwhelming exhaustion related to parental roles, emotional distancing from children and a sense of ineffectiveness in the parental role. Parenting burnout is caused by a combination of child characteristics, stable parental traits and parenting factors, for example, role restriction and relationship problems. Child characteristics that compound demands on parents can intensify parental stress (Mikolajczak et al., 2018). It can be argued that child sleep problems are an example of such a characteristic as they impose frequent demands on parents and require increased parental involvement. Parental traits, specifically neuroticism, have been associated with heightened stress and burnout. As discussed previously, anxiety, which is a

characteristic of neuroticism, can have an adverse influence on child sleep patterns. Moreover, as poor sleep increases stress, the risk of parental burnout is heightened. Insufficient sleep has been associated with less positive parenting practices. In an effort to promote positive parental involvement and responsiveness, McQuillan et al. (2019) noted the need for interventions that target sleep.

#### 3.5.5. The Interaction Between Mood, Affect, Relationships and Stress

While each of the facets is influenced individually by child sleep problems, they also interact in a complex manner to determine parental well-being. Declines in social cognition as a direct result of sleep deprivation heighten conflict in relationships (Gordon & Chen, 2014), thus lowering relationship satisfaction. Negative affect influences conflict situations in that fatigued parents are more prone to react negatively to problems (Minkel et al., 2012). Furthermore, lowered empathy may contribute to situations marked by conflict in that there is a lack of understanding between partners (Gordon & Chen, 2014). A combination of poor empathic accuracy, poor emotional recognition, decreased conflict resolution and elevated negative emotion exacerbate conflict between partners (Gordon & Chen, 2014). It therefore appears that social cognition, relationship satisfaction and negative affect are interrelated.

Sleep problems intensify the experience of negative affect and lower positive affect, which can contribute to parental depression. While maternal PND risk factors include a history of depression, depression in a partner, reduced partner support, and marital conflict or dissatisfaction, and poor sleep quality (Martin et al., 2007; Ogbo et al., 2018; Okun et al., 2018), paternal PND risks comprise poor infant sleep, a history of depression, partner depression, lack of social support, poor economic circumstances and relationship conflict and dissatisfaction (Field, 2018; Philpott & Corcoran, 2017). Further, paternal PND has an adverse effect on relationship satisfaction (Philpott & Corcoran, 2017; Smart & Hiscock, 2007). Fatigue resulting from child sleep problems increases conflict, which, in turn, leads to decreases in relationship satisfaction, thereby contributing to the risk for maternal and paternal PND. Paternal depression further engenders relationship dissatisfaction, thus amplifying the negative impact of child sleep problems. Therefore, one may regard relationship dissatisfaction and depression as interdependent risk factors. Moreover, enhancing infant sleep may be an important step in ameliorating the repercussions of poor sleep on relationship satisfaction, mood and affect.

On the other hand, as discussed previously, research has also linked mothers' prenatal mood disturbances to poor infant sleep. A higher incidence of maternal depression during pregnancy predicted more sleep problems for children at three and a half years of age (Toffol et al., 2019), thus creating a reciprocal relationship between infant sleep problems and mood disturbances. Furthermore, paternal depression has been associated with sleep disturbances in children (Field, 2018), thus indicating that depression in parents can precipitate infant sleep problems, which, in turn, has an adverse effect on several facets of well-being, including eliciting greater depression in parents.

Depression and stress have a reciprocal relationship in that while stress is a risk factor for depression (Field, 2018), depression has been associated with increases in parental stress (Kerstis et al., 2016). When considering stress and burnout, family functioning is important as it places further demands on parents. Relationship satisfaction and having a co-parent that agrees with one's goals and practices have been associated with less stress and burnout (Durtschi et al., 2017). As noted previously, poor sleep lowers couple satisfaction and has been associated with a higher incidence of maternal reports that their partners undermine their management of a child's behaviour, thus decreasing family functioning and simultaneously, increasing stress, risk of burnout and depression. The demands of parenting roles, which are amplified by child sleep problems, can produce both parental stress has a significant detrimental effect on parental relationships (Randall & Bodenmann, 2017), thus signifying that stress, relationship satisfaction and mood are interdependent.

Finally, there are inconsistencies in extant literature on parental life satisfaction. Although longitudinal research has often been conducted by employing large scale national survey data, for example, the German Socio-Economic Panel, Russia Longitudinal Monitoring Survey and Swiss Household Panel Data, these data have mostly represented higher income countries. Despite this, it appears that parental life satisfaction increases or decreases under certain conditions. Although parenthood has been associated with increases in life satisfaction (Baetschmann et al., 2016), this has been offset by the stress of financial strain and parental role demands (Pollmann-Schult, 2014). While Mikucka (2016) revealed that in Russia, life satisfaction only increases after the birth of the second child, Mikucka and Rizzi (2020) found that it decreases for Swiss mothers after the birth of the second child. Moderating factors associated with life satisfaction include unplanned pregnancies (Baetschmann et al., 2016; Mikucha, 2016), maternal age at birth (Aasheim et al., 2014) and paternal involvement (Agache et al., 2014). It is further acknowledged that, in addition to moderating factors on life satisfaction, decreased mood and increased stress are detrimental to life satisfaction (Extremera et al., 2009; Fergusson et al., 2015; Kuang-Tsan & Fu-Yuan, 2017) as is insufficient sleep in adults (Zhi et al., 2016). While there is a paucity of

research on the influence of child sleep problems on parental life satisfaction, it stands to reason that sleep deprivation as a result of child sleep problems could reduce parents' life satisfaction.

To conclude, poor sleep affects mood, affect, relationships, stress and life satisfaction. As such, these facets are explored in the present study. Since parental wellbeing is adversely affected by child sleep problems, it is imperative to consider methods of reducing the negative effect of child sleep problems so as to enhance parental well-being. Sleep interventions, directly targeted at improving child sleep patterns, is one such alternative.

## 3.6. Sleep Interventions

Sleep problems result from a complex interaction of multiple factors. However, children associate sleep with specific parental behaviours as well as an expected sleep environment or object and sleep problems may therefore involve elements of learned behaviour. The principles of behaviourism posit that what can be learned can be unlearned. Thus, learned sleep problems are responsive to behavioural modification.

#### 3.6.1. The Use of Sleep Interventions for Children with Sleep Problems

Several behavioural interventions and strategies, which have been developed to assist parents with child sleep problems, focus primarily on modifying parental behaviours and cognitions in relation to a child's sleep-related behaviours. This is done in order to improve limit-setting and decrease excessive parental involvement at bedtime and during night-wakings (Reuter et al., 2020; Sadeh, 2005; Whitall et al., 2021). Founded on the principles of learning, the interventions focus on behavioural shaping, reinforcement and the extinction of undesirable behaviours (Meltzer & Mindell, 2014). Interventions have been developed to eradicate signalling behaviours such as crying in children, shape parental bedtime behaviour to reduce settling problems, increase self-regulation in children and prevent the reinforcement of signalling behaviours and settling problems as behaviour that is not reinforced is eradicated (Reuter et al., 2020; Sadeh, 2005; Whitall et al., 2021). As there is a lack of agreement regarding nomenclature for these interventions both in the academic literature and more popular media, the most frequently used term is employed throughout this thesis. Nonetheless, other terms that have been applied to each intervention are acknowledged. In Table 1, the academic and alternative names together with a summary of each procedure are presented.

## Table 1

# Academic and Alternative Terms for Sleep Interventions

Academic term	Alternative terms	Description
Unmodified extinction	Extinction	Putting a child to bed and ignoring all signals until
	Pure extinction	a set time the next morning (monitors for safety and illness)
	Cry-it-out method	
Graduated extinction	Extinction based techniques	Delaying the response time after a child signals
	Modified extinction	(fixed or incremental schedules)
	Systematic ignoring with minimal checks	
	Ferber method	
	Controlled crying	
	Controlled comforting	
	Checking method	
	Cry-it-out	
	Minimal check	

Academic term	Alternative terms	Description
Extinction with parental presence	Camping out	Gradually decreasing parental presence after
	Adult fading	bedtime
	Parental presence with support	
	Extinction based strategies	
	Gradual retreat	
	Parental presence without support	Remaining in room with child but ignoring all cues
	Responsive with decreasing assistance	Gradually decreasing parental presence after
	intervention	bedtime, but with continued verbal
		responses
Bedtime fading	Bedtime fading with response cost	Limiting time in bed by delaying sleep onset until a child is close to when they would naturally fall asleep
	Delayed bedtime with removal from bed	
	Delayed bedtime	
Scheduled awakenings		Waking and comforting the child to sleep prior to
		spontaneous nightly waking
Positive bedtime routines		Consistent quiet nightly set of activities to prepare
		the child for sleep

A discussion of the terminology presented in the table follows. Unmodified extinction (UE), graduated extinction (GE) and extinction with parental presence (EwPP) are implemented and studied most frequently. Accordingly, these terms are evaluated and discussed first. Subsequently, bedtime fading, scheduled awakenings and positive bedtime routines are discussed.

**3.6.1.1. Unmodified Extinction.** The use of UE first occurred during a case study Williams (1959) conducted to eliminate problematic bedtime behaviours, specifically, tantrums. In the case study, a 21-month-old child exhibited extreme fussing and tantrum behaviours if his parents attempted to leave the room during bedtime. His parents were required to spend up to two hours sitting in the room until he fell asleep. Williams (1959), employing the principles of learning theory, instructed the child's parents to avoid reinforcing the problematic behaviour by not responding to it. Consequently, the parents put the child to bed calmly and in a relaxed manner, after which they left the bedroom and closed the door. All the child's tantrum behaviour was ignored and the parents did not re-enter the room until a predetermined time the next morning. During the first night of the extinction, the child screamed for 45 minutes. He did not scream at all, possibly because of fatigue, during the second night and on the third night, he screamed for 10 minutes. By the eighth night, the screaming had stopped and by the 10<sup>th</sup> night, he smiled as his parents left his room. Spontaneous recovery, sometimes referred to in more recent literature as a response burst (Črnčec et al., 2010; France et al., 2003; Kuhn & Elliot, 2003), occurred a week later and was reinforced when an aunt put him to sleep and returned to his bedroom to stay with him until he was asleep. A second extinction series followed, with similar results to the first. No further bedtime tantrums were reported during follow-ups for the next two years. Williams (1959) noted that there were no deleterious side effects or consequences after the intervention. A follow-up almost four years later revealed that the child appeared to be friendly, expressive and outgoing.

UE has since been shown to be a highly effective strategy for eliminating settling and night waking problems (Mindell et al., 2006; Ramchandani et al., 2000), although it is essential that parents monitor the child for injury or illness during this procedure. However, this technique can cause anxiety for parents as they experience difficulty ignoring their children's cries. Therefore, parental consistency is a major obstacle for the use of UE (Blunden et al., 2016). Spontaneous recovery is also a limiting factor for the satisfactory implementation thereof. Furthermore, during an UE intervention study, Middlemiss et al. (2012) tested both infants and mothers at the onset of sleep initiation for cortisol and again, 20 minutes after the child had fallen asleep. Middlemiss et al. (2012) found that during the

first two nights, both the mothers and infants' cortisol levels were raised, indicating a physiological stress response. On the third night, although the infants no longer demonstrated behavioural distress, specifically crying, their cortisol levels were elevated. On the contrary, the mothers had decreased cortisol levels, thus indicating that the mothers' stress responses were lowered when the infants did not exhibit behavioural signs of distress such as crying. It is noteworthy that the infants' behaviour had been modified to reduce crying even though they were experiencing distress. It is also necessary to consider that the infants and mothers were placed in a stressful context because the study was conducted in a unit of a local hospital for five days. The mothers and nurses prepared the children for sleep through specific bedtime activities, after which a nurse placed the children in cribs on their own, separate from the room where their mother stayed. The children were subsequently expected to self-regulate. Once the children were put in the crib, their mothers were not allowed to attend to them until the following day. Because of the methodology employed in the study, it is difficult to conclude whether the children were distressed as a result of the unfamiliar environment, the UE intervention or a combination of the two.

Although UE is recommended for practice by the American Academy of Sleep Medicine (AASM), it is also noted by the AASM that it has acquired limited parental acceptance (Morgenthaler et al., 2006). UE is rarely used as parents experience it as too distressing (Črnčec et al., 2010). Furthermore, not enough is known about its potential harmful consequences. Consequently, it was not implemented in the current study.

**3.6.1.2. Graduated Extinction.** GE techniques have been developed because of the stressful nature of UE. GE was first employed by Rolider and Van-Houten (1984): parents were instructed to ignore their children's cries for as long as they felt comfortable, after which they could pick them up and comfort them. The length of delay was increased by five minutes every second day until the crying behaviour was extinguished. The average length of crying at baseline was 20 minutes. It is of interest that improvement was only reported once the delayed response was longer than the duration of the crying, at which point the procedure was similar to UE. Once this stage was reached, the extinction of the undesirable behaviour was achieved within nine days. Follow-up at three months revealed no spontaneous recovery of crying behaviour. Therefore, while it appears that this version of GE took longer than UE, the response burst did not occur in the former.

Rolider and Van-Houten's (1984) strategy was modified slightly and popularised by Ferber (1985) in a self-help book, which instructed parents to follow a responsive night-time routine before putting their child to bed and subsequently delaying response to signals with progressively increased intervals. Originally, Ferber (1985) suggested that parents should wait for three minutes after the first signal on the first night and then gradually increase the time by two-minute intervals every time the child signalled during that night until they reached 10 minutes. The following night, parents were required to wait for five minutes before responding. This was gradually increased until 12 minutes. Parents were advised that when they responded to their children, their comfort should comprise calm verbal reassurances and touch, but not involve picking children up or feeding them to provide comfort. Comforting could last for up to two minutes. Ferber (2006) later modified his methods slightly to allow for parental flexibility and preference and acknowledged individual variability in both children and parents, encouraging parents to adapt the method to the needs of their child and culture. For example, what was originally constructed as a sevenday program can be extended to two weeks or even longer. Furthermore, the progressive delayed responses can occur at shorter intervals.

The recommended practice for GE can take the form of either fixed schedules, for instance, checking every five minutes or incremental schedules in which intervals increase during the same night or on successive nights, with responses remaining brief and minimally interactive (Morgenthaler et al., 2006). In practice, GE is often customized to suit parental preferences and the child's age, temperament and developmental level (Thomas et al., 2014). Parental preference has an influence on whether a fixed or interval schedule is followed and dictates the length of time between responses. A child's age, temperament and developmental level also determine whether shorter or longer intervals between responses are appropriate. Thus, while the principles of the intervention remain the same, there is a measure of individual variance in the implementation of GE interventions. Furthermore, there is no agreed-upon maximum length of time before responding. While some studies have reported waiting for a maximum of seven minutes (Matthey & Črnčec, 2012), others have noted a maximum of ten minutes (Hiscock et al., 2008) or even up to 25 minutes (Honaker et al., 2018).

**3.6.1.3. Extinction with Parental Presence.** An alternative to GE occurs when parental presence is decreased over time as opposed to increasing the length of time before responding. Referred to as EwPP, the intervention requires parents to be present in the room after the usual bedtime routine until the child falls asleep. They then gradually decrease the length of time spent in the room over consecutive nights or weeks (Galland & Mitchell, 2010). Parents should have as little interaction with their child as is possible or comfortable and should avoid any behaviour that might prevent sleep onset. For instance, they can leave a hand on the child, but should not hold, sing, talk to, stroke or pat the child

once the bedtime routine is completed as the sensory stimulation could prevent settling to sleep. The time spent in the room is then gradually decreased over the course of a few days or weeks until parental presence can be removed immediately after the bedtime routine is complete (Hiscock et al., 2007). For example, if the child requires the parents to remain in the room until sleep onset every night, the parents will start the intervention by remaining until the child is drowsy but still awake. They may leave that night or several nights thereafter while the child is still awake but becoming drowsy. Thereafter, they continue to decrease the length of time until parental presence can be removed after the normal bedtime routine.

Other alternatives include parental presence without support and a responsive with decreasing assistance intervention. During parental presence without support, parents remain in the room, usually sleeping in a bed or mattress next to the child's bed, but ignore signalling from the child (Kuhn & Elliot, 2003). If the child continues signalling, the parents can make slight noises or movements such as coughing or turning over so as to alert the child of their presence. If the child continues to signal or cry, the parents can get up and gently soothe their child with their voice or touch, but should not pick the child up. The purpose is to minimise involvement to prevent the association of parental presence with sleep. The decreased necessity of parental presence at sleep onset subsequently allows for improved self-regulation (France, 2011). During a responsive with decreasing assistance intervention, parents initially always respond immediately to a child's signals, first verbally and then physically. When resettling the child, the parents stop their normal methods, for example, rocking and feeding before the child falls asleep, thus putting the child down when drowsy but awake. The sleep assistance is subsequently gradually and progressively reduced from intense to mild physical interaction, for instance, moving from feeding to rocking to patting with continual verbal reassurances throughout. Eventually, they delay their physical presence, but with continued verbal assistance. Parents continue to respond to the child physically and verbally, but with incremental delays in physical, but not verbal response time until the child learns to falls asleep while waiting for the parents to return (Blunden & Dawson, 2020).

**3.6.1.4. Evaluation of Unmodified Extinction, Graduated Extinction and Extinction with Parental Presence.** The aim of GE and EwPP is not to extinguish the child's signals, although this might result from the procedures, but to enable the child to develop skills to self-regulate. Self-regulation, as noted previously, allows the child to fall asleep independently and without sleep associations such as rocking, holding or feeding. Reviews and meta-reviews of the literature have confirmed the efficacy of both GE and EwPP for settling problems and frequent night-wakings (Hall et al., 2015; Meltzer & Mindell, 2014; Rafihi-Ferreira et al., 2019; Ramchandani et al., 2000), with efficacy rates of over 80% (Črnčec et al., 2010; Honaker et al., 2018) up to six months later (Mindell et al., 2006). Follow-up studies of GE and EwPP have revealed improved SOL and frequency and duration of night-wakings up to 12 months later (Meltzer & Mindell, 2014; Mindell et al., 2006), as well as longer consolidated sleep as measured through actigraphy (non-invasive ankle monitoring of gross motor movement to assess sleep-wake cycles), and fewer parent-reported night-wakings (Hall et al., 2015).

Contrary to the noted efficacy rates, Loutzenhiser et al. (2014) demonstrated lower success rates of approximately 60% for GE. The authors suggested that because of physiology or temperament, some children might not respond to GE techniques. This concurs with Bélanger et al. (2015) in that dependency, a temperament trait and characteristic of resistant attachment and thus, higher levels of anxiety when separated from a primary caregiver, is associated with poor infant sleep. Therefore, children high on dependence are unlikely to respond to the intervention in the same manner as children lower on dependence. Furthermore, it is important to note that not all sleep interventions can be used in all children effectively. Kahn et al. (2019) revealed that separation anxiety can modify the efficacy of sleep interventions, with highly anxious children responding better to EwPP than GE strategies. Considering that EwPP decreases parental presence as a sleep association before removing such presence, this is expected. Thus, it is arguably a gentler method than GE, which removes parental presence as a method to decrease the sleep association. Although improvement in sleep has been found regardless of the intervention applied, it is important to personalise the intervention for each family as "one treatment may not fit all" (Kahn et al., 2019, p. 7).

Both GE and EwPP are usually implemented over a longer period of time as parents still tend to respond to signalling behaviour, which results in children taking longer to develop self-regulation. Parents might find this increased length of time to improved sleep discouraging. Furthermore, exhausted parents could conceivably struggle to adhere to the sleep intervention when methods such as rocking and feeding would get a child to sleep quickly. It is also important to consider that parents might find it distressing to ignore a child's signals, even if just for a few minutes and consequently, either stop the intervention (Blunden et al., 2016) or modify it to something more palatable, but which takes longer to succeed. High parental stress has been reported on the first night when both GE and EwPP are implemented, with significant decreases in stress a week later (Honaker et al., 2018). It is of interest that Honaker et al. (2018) found that parents experienced checking on or responding to a child during both these interventions as more helpful for them than for their

children. This suggests that, as opposed to UE, parental anxiety related to separation anxiety or fears over child welfare is decreased with GE and EwPP because it allows for parental reassurance that their child is well. It is important to note that parents have reported less success with EwPP than with GE. They further reported that it takes longer to achieve enhanced sleep with the former. The lower success rate of EwPP may be attributed to attrition due to the length of time to improved sleep. In this regard Meltzer (2010) indicated that parents might regress to more permissive behaviours during the course of the implementation.

While UE achieves results much faster than GE, there are several concerns about this method. The spontaneous recovery of crying and parental intolerance has been discussed. However, parental consistency is also paramount as inconsistent behaviour might result in intermittent reinforcement of the signalling behaviour, thus increasing the problematic behaviour unintentionally (Owens et al., 2002). In other words, if a parent leaves a child to cry for 30 minutes and then responds intermittently, the child learns to cry longer the next time, thus compounding the sleep problem. During GE, the parents consistently respond to the child, just at slightly longer intervals, which allows time to self-regulate. This also applies to EwPP, where the child learns self-regulation with minimal parental presence. This gradual approach, capable of customization, is thus more palatable to parents. Matthey and Crnčec (2012) revealed that while all parents were satisfied with using GE, nearly all were content with EwPP. Similarly, Hiscock et al. (2008) revealed strong parental endorsement of GE techniques. Yet, outside of clinical settings, endorsement appears to be lower. Studies of community samples from the United States, Europe and Canada revealed endorsement rates of between 33% and 50% (Honaker et al., 2021; Loutzenhiser et al., 2014; Maute & Perren, 2018). The discrepancy in endorsement is likely due to lack of familiarity with sleep interventions, maternal cognitions related to the safety of such interventions and perceptions of child sleep not being problematic (Honaker et al., 2021). GE and EwPP were employed in this study.

**3.6.1.5. Bedtime Fading and Scheduled Awakenings.** There are alternatives to managing sleep problems that do not involve ignoring a child's signals. These procedures have not received much attention in the literature and are not implemented as often as the GE procedures. Scheduled awakenings require parents to wake their infants approximately 15 to 30 minutes before a spontaneous awakening and then soothe them back to sleep immediately. The intervals between awakenings are then gradually increased until sleep consolidation is achieved (Črnčec et al., 2010). This proactive procedure is quite intensive as it requires parents to be aware of their child's sleep patterns before attempts at modification
can be made. Furthermore, it requires parents to schedule their own awakenings, usually with the assistance of an alarm, instead of responding to night-wakings. Increased sleep disturbances could potentially decrease parental well-being. Although scheduled awakenings are efficacious for night-wakings (Mindell et al., 2006), they do not assist with resolving settling problems at bedtime.

Bedtime fading involves gradually limiting time in bed, usually by delaying sleep onset (Gradisar et al., 2016). Operating on the principles of sleep homeostasis, which posits that sleep pressure increases as the result of time spent awake and decreases with sleep, delayed bedtime brings children closer to when they would naturally fall asleep from fatigue, thus limiting problematic bedtime behaviour. Bedtime fading can involve two practices: taking a child out of bed if they do not fall asleep during a set period of time and trying again later, and delaying bedtime until the child is tired enough to fall asleep quickly (Mindell et al., 2006). The former, which is known as bedtime fading with response cost, is not recommended as there are concerns that it may reinforce a child's behaviour to leave the bedroom (Cooney et al., 2018). In spite of this, the procedure has been shown to reduce sleep onset latency, problematic bedtime behaviour and first waking after sleep onset (Cooney et al, 2018). Benefits have been maintained at a two-year follow-up if parents reimplement the procedure when necessary. While efficacious for settling problems, bedtime fading does not reduce night-wakings (Gradisar et al., 2016).

Bedtime fading and scheduled awakenings each target only one facet of child sleep problems, namely, settling problems or night-wakings. While both are efficacious interventions, they frequently occur together. Accordingly, they were not included in the present study.

**3.6.1.6. The Importance of Positive Bedtime Routines.** Finally, before any attempt is made at modifying night-time behaviour, it is important to ensure that positive bedtime routines are in place. As noted in 3.2.2.4, this requires a set bedtime and quiet activities that allow for positive parent-child interactions. Furthermore, it is imperative that parents ensure that the child is calm and in a ready state for sleep, with no stimulation that could affect sleep onset. Quiet activities include a massage, cuddling, reading and singing to the child. It is crucial that the bedtime routine should be consistent and not vary across nights. A positive bedtime routine is an important part of sleep hygiene and is effective in improving SOL, night-wakings and sleep consolidation as quickly as within three nights of implementation (Mindell et al., 2017). While a positive bedtime routine can enhance sleep and is arguably one of the least stressful methods to do so, Morgenthaler et al. (2006) asserted that there is

insufficient evidence to recommend bedtime routines as a single therapy for child sleep problems. Consequently, the use of GE and EwPP are often required to resolve such problems. Accordingly, positive bedtime routines were included in the present study.

#### 3.6.2. Criticism against Sleep Interventions and Response

While the sleep interventions, which have been discussed, have proved efficient internationally (Mindell et al., 2006; Price et al., 2012; Ramchandani et al., 2000) and no deleterious consequences as a result of their implementation have been reported in research (Chapman, 2017; Thomas et al., 2014), many parents still fear that their use will have a negative effect on parent-child attachment or the emotional development of the child. This is mostly as a result of conflicting data and opinion pieces, which have been disseminated to the public and spread in popular media and parenting resources, in particular, books and websites (Chapman, 2017). Confusion and bias have resulted, which has been exacerbated by the lack of agreement regarding intervention names and the focus on infant crying as opposed to improved sleep. For example, cry-it-out, a different term for UE, is often also used to refer to GE techniques when children are not, in fact, left to cry all night. In addition, GE is sometimes termed controlled crying, as opposed to the less commonly used controlled comforting. This implies that the focus of the procedure is on controlling the crying of the child instead of controlling the parents' responses, as is actually the case.

Furthermore, popular media has focused on potential harm and negative repercussions as a result of the use of sleep interventions. Chapman (2017) revealed that even though research has not found any adverse effects of sleep interventions, some parenting resources have made claims of the harmful consequences thereof. Although sleep interventions have been criticized as inappropriate and harmful in academic work as well, Črnčec et al. (2010) argued that such statements against extinction-based strategies are hearsay or opinion, which are based on downward extensions from other fields of study or concerns related specifically to UE, which are subsequently generalised to other sleep intervention strategies.

To address concerns regarding the safety of sleep interventions, Gradisar et al. (2016) assessed infants' sleep and wakefulness, both parents and infants' stress levels during the sleep interventions, infants' emotional and behavioural problems, and parent-child attachment. They found that both GE and bedtime fading provided substantial benefits to infant sleep, with no adverse stress responses and long-term effects on parent-child attachment and child emotions and behaviour. Rather, Gradisar et al. (2016) revealed large

declines in morning and afternoon cortisol and concluded that the interventions did not result in chronically elevated cortisol and thus, they did not experience chronic HPA dysregulation, as Blunden et al. (2011) suggested. Furthermore, at the 12-month follow-up, there were no significant differences in attachment and behavioural and emotional problems between the intervention and control groups, thus demonstrating that the use of sleep interventions did not influence attachment, behaviour and emotions in children. Positive outcomes in the form of improved sleep and decreased stress responses were evident in the short-term, specifically, at the three-month follow-up.

To determine the long-term safety of sleep interventions further, Price et al. (2012) conducted a longitudinal study to examine the long-term impact of the use of two forms of sleep interventions, namely, GE and EwPP. In this five-year follow-up study, Price et al. (2012) found no difference in outcomes between the intervention groups and control groups, specifically, emotional and behavioural problems, mental health, sleep habits, quality of life, child-parent relationships and maternal mental health. This suggests that no long-term harm is caused by the use of these interventions. More recently, in an attempt to determine the safety of UE interventions, Bilgin and Wolke (2020) studied the long-term effects of leaving an infant to cry at birth, three months, six months and again at 18 months. The results revealed no adverse effects on infant-mother attachment and behavioural development at 18 months, even when parents left their new-born infants to cry. Therefore, it appears that while public and academic opinion varies, research conducted on the use of sleep interventions has demonstrated improvements post-intervention on several outcomes, with no negative outcomes reported in the short, medium and long term. It may therefore be concluded that sleep interventions are safe for use.

In conclusion, to date, research has revealed no harm is caused by the use of sleep interventions even though some interventions may be more appropriate or acceptable under specific circumstances. To minimise confusion, consensus needs to be reached regarding nomenclature and the focus of sleep interventions, specifically parental behavioural changes, at least in academic publications. It seems safe to conclude after a consideration of Akdoğan (2018), Bilgin and Wolke (2020), Giesbrecht et al. (2020), Gradisar et al. (2016) and Price et al. (2012) that while children may experience discomfort during such interventions, neither intervention results in deleterious consequences in the short, medium, and long term. Although the efficacy and safety of sleep interventions have been discussed with a focus on the child, the main aim of this study was to explore parental well-being in the context of sleep interventions. As such, it is discussed in the next section.

#### 3.7. The Effect of Sleep Interventions on Parental Well-Being

The experience of well-being has a substantial influence on individual and family functioning. Therefore, it is important to examine potential consequences of sleep interventions on parents' well-being. Any deterioration or improvement in parental well-being affects the family unit and its functioning (Newland, 2015), potentially leading to increased or decreased well-being for all members. In Chapter 2, SWB was discussed from the perspective of parenthood. A decline in well-being associated with parental responsibilities and decreases in leisure time was revealed. The impact of stress, PND and couple satisfaction on SWB has also been highlighted. The manner in which insufficient sleep has a further adverse impact on parental well-being has been discussed in this chapter. Research has shown that the use sleep interventions can improve infant sleep and ameliorate the negative effects of poor sleep in the child. Accordingly, findings related to sleep interventions and parental well-being as well as research on facets of parenthood are subsequently discussed.

### 3.7.1. Satisfaction with Life

Satisfaction with life is a component of SWB and an evaluative process based on the subjective assessment of one's circumstances with what is considered an appropriate standard (Diener et al., 1984). However, lack of information regarding such appropriate standards could influence parents' experience of life satisfaction. McDowall, Galland, et al. (2017) revealed that many parents have little understanding of sleep problems and normal infant sleep. Therefore, parents might compare their child's sleep patterns or sleep problems with an impractical or ideal standard and, in finding it lacking, experience a decrease in life satisfaction. Zhi et al. (2016) also found an association between insufficient sleep and diminished satisfaction with life. Finally, child sleep problems have been shown to have a negative effect on parental well-being through an increase in depression, stress and negative affect as well as decreased couple satisfaction, which could influence life satisfaction. Nevertheless, there is a paucity of research on satisfaction with life and the use of sleep interventions. These gaps were addressed in the present study by exploring the effect of sleep interventions on life satisfaction.

#### 3.7.2. Positive and Negative Affect

Only a few studies have examined the influence of sleep interventions on positive and negative affect. Most of the research that has explored affective states has focused on negative affect such as anxiety, anger and frustration (e.g., Hall et al., 2015; Hall et al., 2017; Matthey & Črnčec, 2012; Mindell et al., 2009; Price et al., 2012). Anxiety might be primarily experienced as a result of a lack of knowledge and confidence to deal with child sleep problems. On the other hand, anxiety may also originate from concerns related to couple satisfaction, depression experienced by the individual or partner and increased stress related to parenthood. Although studies have revealed that maternal anxiety decreases following sleep interventions (Symon et al., 2012; Symon & Crichton, 2017), research on paternal anxiety is absent. As sleep interventions address the primary and secondary causative factors of anxiety, a post-intervention reduction may be expected. Anger and frustration appear to be experienced predominantly in relation to child sleep demands and a perceived inability to cope with the same. Both anger and frustration improve after the implementation of sleep interventions (Hall et al., 2015; Hall et al., 2017; Symon & Crichton, 2017), presumably because demands concerning sleep decrease. It has also been postulated that anger decreases as a secondary result of improvements in relation to PND, stress and couple satisfaction after the implementation of an intervention.

More is known about the influence of negative affect than positive affect on distress because more studies have explored parental emotions from the perspective of negative affect than positive affect. Only one known study has examined how sleep interventions influence positive affect in parents. Symon and Crichton (2017) measured pleasure after an extinction based intervention and found that parents reported that pleasure improved profoundly. They also revealed significant increases in parental confidence, thus suggesting a possible correlation between confidence in managing child sleep demands and positive affect. Since it has been established that happiness protects against illness (Veenhoven, 2008) and leads to more enhanced relationships (Kansky & Diener, 2017), it is important to establish the effect of sleep interventions on both positive and negative affect. The paucity of research on negative and, in particular, positive affect needs to be addressed. As such, the present study employed a measure of positive and negative affect that comprises 12 affective states, including positivity, happiness, joy and contentment to achieve a more enhanced understanding of the possible effect of sleep interventions on parental affect.

#### 3.7.3. Couple Satisfaction

In Chapter 2, research revealed that relationship satisfaction often declines with the addition of children to the home. Further, research suggesting that marital quality is associated with parental well-being was highlighted. It was further demonstrated in section 3.5.2 that sleep is an important predictor of couple satisfaction, with more enhanced sleep associated with increased satisfaction. It has also been confirmed that PND and increased stress can have a deleterious effect on couple satisfaction. Because sleep interventions have been shown to improve child sleep problems, thus improving parental sleep quality and

quantity, as well as PND and stress, it is reasonable to infer that the implementation of sleep interventions may have a positive influence on couple satisfaction.

Few studies have considered the impact of sleep interventions on couple satisfaction. A review conducted by Mindell et al. (2006) referenced three studies that revealed significant improvements in marital satisfaction after the implementation of sleep interventions, specifically GE and positive bedtime routine. Thus, the use of sleep interventions are recommended as being effective in improving the secondary outcomes of marital satisfaction (Morgenthaler et al., 2006). Smart and Hiscock (2007) conducted a pilot study of the impact of self-settling strategies on parental well-being in which relationship satisfaction was considered as a secondary outcome. In contrast to Mindell et al.'s (2006) review, no change in relationship happiness post-intervention was demonstrated. A possible reason for the discrepancy in findings could be that while Smart and Hiscock (2007) measured relationship happiness by employing a single item from the Spanier Dyadic Adjustment Scale (Spanier, 1976), Mindell et al. (2006) used the full 32-item scale. The item in question, namely, the degree of happiness, all things considered, of one's relationship, could be regarded as an indication of general relationship happiness, which does not necessarily consider the complex nature of relationship satisfaction. Furthermore, Smart and Hiscock (2007) were vague about what settling strategies were employed and therefore, it is unclear which sleep interventions they utilised. It is necessary to address the dearth of research in this area since higher levels of couple satisfaction have been associated with higher quality parent-child relationships (Malinen et al., 2010) as well as higher overall SWB. It is important to understand the use of sleep interventions and their potential positive influence on couple satisfaction further. It is also essential to consider whether the use of sleep interventions has an adverse effect on relationship satisfaction, given that couples might disagree on the implementation of such strategies. In spite of this, there is a paucity of research on the topic.

### 3.7.4. Parenting Stress

During parenthood, stress increases as a result of increased demands and responsibilities, household chaos, as well as a decrease in leisure activities and quiet time (Nomaguchi & Milkie, 2020; Umberson et al., 2010). Since parenting stress has a deleterious effect on both parents' SWB (Sharda et al., 2019), it is crucial to determine whether the implementation of sleep interventions can reduce parental stress, thereby potentially increasing well-being. Research has shown that stress improves after the implementation of sleep interventions. A review conducted by Field (2017) confirmed that stress decreases after the implementation of sleep interventions. As with PND, the AASM has recommended sleep interventions for improving the secondary outcomes of parenting stress (Morgenthaler

et al., 2006). However, Field (2017) and Morgenthaler et al. (2006) did not differentiate between specific interventions. Some studies have examined specific interventions. Mindell et al. (2009) demonstrated that a nightly bedtime routine results in improvements in maternal tension. Symon et al. (2012) revealed that UE improves parental stress at six- and 12-week follow-ups significantly, thus indicating short-term efficacy for stress reduction. Similarly, Gradisar et al. (2016) found that maternal stress declines for both GE and bedtime fading, even after 12 months. These studies suggest that as a result of the use of sleep interventions, there are long-term improvements in stress.

The studies outlined above have all examined a single or several interventions with regard to their impact on stress. A comparison of GE and EwPP revealed that self-reported stress improved for 50% to 75% of mothers in both conditions (Matthey & Črnčec, 2012). This suggests that up to half of parents who implemented GE or EwPP may have experienced no improvements in stress, which merits further investigation. Blunden and Baills (2013) suggested that parents experience the use of GE as too stressful. However, because they asked parents why they did not use or were unsuccessful in their use of GE, the data were potentially skewed towards a negative response. Nonetheless, it remains important to understand parental experiences of GE and EwPP as the success or lack thereof during implementation influences parental trust, confidence and the capacity to manage child sleep problems. In this regard, Loutzenhiser et al. (2014) conducted a qualitative study of parental perceptions of GE, which revealed that on average parents experience the implementation as guite stressful for themselves and for their child. It is of interest that those parents who did not experience the technique as stressful also did not report that their children found it stressful, suggesting that parental distress is directly related to the perception of distress in their children. To elucidate parental stress during sleep intervention implementation further, Honaker et al. (2018) conducted a retrospective study that examined perceptions of stress using UE, GE and two variations of EwPP. The results revealed that regardless of the method used, high parental stress was present on the first night of implementation. However, there was a significant decrease in stress a week later. Honaker et al. (2018) suggested that the high incidence of stress may have been the result of infant crying, which was typically highest on the first night and reduced significantly after one week. This concurs with Blunden and Baills (2013) who revealed that parents experience difficulty hearing their children cry.

Accordingly, it would appear that while many parents experience GE and EwPP as stressful during the implementation, the first night is typically the worst, with substantial improvement as the implementation progresses. Nevertheless, while most parents,

specifically 83%, have successfully implemented sleep interventions on their initial attempt, half of those parents who were not successful stopped the implementation within the first week (Honaker et al., 2018). This may be due to both parents' and children's perceived stress. Further research is recommended so as to develop guidelines to improve the successful implementation of sleep interventions, particularly as parents who have implemented sleep interventions successfully have experienced a reduction in stress in both the short and medium term. Accordingly, it is essential to determine parental experiences of perceived stress qualitatively and quantitatively during and after the implementation of sleep interventions, few have examined perceived stress during implementation of sleep interventions, few have examined perceived stress during implementation (Honaker et al., 2018; Loutzenhizer et al., 2014). Therefore, in the present study, the change in perceived stress before and after interventions, specifically employing GE and EwPP, were examined. Furthermore, perceived stress was explored qualitatively during the implementation of both interventions, thereby addressing the knowledge gap.

#### 3.7.5. Postnatal Depression

Finally, PND disproportionately affects mothers of children with sleep problems (Okun et al., 2018). Furthermore, many of these mothers score in the clinically significant range (Hiscock et al., 2008). Parental PND has been associated with the breakdown of relationships as well as an increased risk of both emotional and behavioural problems in children (Avan et al., 2010; Hiscock et al., 2008; Netsi et al., 2018; Philpott & Corcoran, 2017).

A review of the literature has indicated that maternal mood improves and depression decreases after the implementation of sleep interventions (Field, 2017) and therefore, they are recommended for improving secondary outcomes such as maternal mood (Morgenthaler et al., 2006). Individual studies with a pre-post intervention design have found that depression decreases significantly post-intervention (Hall et al., 2017; Smart & Hiscock, 2007; Symon & Crichton, 2017). Symon and Crichton revealed an 85% reduction in depression at a three-month follow-up. Similar studies have demonstrated reductions in depression at up to six-month follow-ups as well (Hall et al., 2017; Hiscock et al., 2007; Matthey & Črnčec, 2012). In an initial study, Hall et al. (2015) by employing GE showed significant reductions in depression, but only for the primary caregiver. However, in a second study, Hall et al. (2015) found that depression decreases for both mothers and fathers. A possible explanation put forth by the authors for the differences initially found between primary and secondary caregivers' depression scores may have been due to a significant correlation between cognition regarding sleep problems and depression. The results further

revealed that anger about infant sleep decreased for primary, but not secondary caregivers. It may therefore be that primary caregivers are prone to perceiving their child's sleep as problematic as they are responsible for night-time settling. Furthermore, sleep interventions improve fatigue as well as cognitions about sleep for the primary caregiver, thus reducing depression. This was confirmed by Hall et al. (2017) who found that at baseline, while mothers' anger about child sleep problems contributed to their depression scores, fathers' anger about the same did not contribute significantly to their depression scores. As expected, improvements in relation to fatigue and sleep quality contributed to the variance of mothers and fathers' depression scores. It is of interest that Hall et al. (2017) also revealed that setting sleep limits contributes to variance in depression scores, thus highlighting the importance of limit setting at bedtime, not just for improved sleep, but also for improved parental mood.

A comparison of intervention groups with control groups has revealed that intervention groups score lower in depression post-intervention than control groups, even at follow-up (Hall et al., 2017; Hiscock et al., 2007; Matthey & Črnčec, 2012), thus indicating that sleep interventions contribute directly to variance in depression. Finally, Matthey and Črnčec (2012) compared GE to EwPP to determine which intervention contributes more to reductions in depression, but found that mood improved similarly for both intervention groups. Therefore, it appears that mood improves as a secondary outcome of sleep interventions because enhanced child sleep patterns lead to an improvement in parental cognitions, sleep quality and fatigue.

There appears to be a dearth of qualitative research on parental depression in the context of sleep interventions. It is important to understand whether and how the experience of depression changes over the course of and as a result of the implementation of sleep interventions. Furthermore, while paternal PND has been found to occur during the postnatal period (Philpott & Corcoran, 2017), only a few studies have explored the effect of sleep interventions on both maternal and paternal depression. Consequently, it is necessary to expand the literature with regard to the effect of sleep interventions on PND. This will enhance guidelines for parents and enable them to manage expectations realistically.

# 3.8. Conclusion

In this chapter, infant and toddler sleep patterns were described and factors that influence these sleep patterns discussed. Light was shed on the impact of parental factors such as bedtime behaviour, cognition, mental health and decisions related to the sleep environment and bedtime routine as well as the child's ability to self-regulate at bedtime and during night-wakings. Sleep problems were defined and their impact on both child and parental well-being discussed. In relation to parental well-being, it is evident that child sleep problems influence the parental relationship, mood and affect, and perceived levels of stress. The complex and often multidirectional interaction between these facets was elucidated. To ameliorate the effect of child sleep problems on well-being, sleep interventions were discussed. Specifically, different types of interventions were described and criticism against their use provided. Finally, research related to the impact of sleep interventions on parental well-being was discussed with reference to satisfaction with life, affect, couple satisfaction, stress and PND. An evaluative summary of Chapter 2 and Chapter 3 follows.

#### 3.9. Evaluative Summary

An overview of positive psychology (PP) and theories of well-being, with a specific focus on parental SWB, is provided in Chapter 2. In essence, PP focuses on helping people flourish and lead happy, healthy lives (Gable & Haidt, 2005; Kern et al., 2020). Focus areas of PP include happiness and well-being (Seligman & Csikszentmihalyi, 2001). Within the hedonic perspective of well-being, Diener (1984) proposed a tripartite model of SWB, which comprises satisfaction with life, high levels of positive affect and low levels of negative affect. Although research has examined parental well-being during early parenthood, SWB within the context of child sleep interventions has not been investigated adequately.

The literature provided in Chapter 2 revealed that children have a considerable influence on the well-being of their parents. Thus, it is necessary to explore how parents' well-being can be enhanced. One of the most noteworthy changes associated with parenting is a disruption of sleep patterns. As revealed in Chapter 3, child sleep problems can have a deleterious effect on parental well-being, specifically affecting mood and affect, stress and couple satisfaction. These sleep problems are often influenced by parental behaviours and cognitions that have an effect on the child's ability to develop self-regulation. Sleep interventions modify parental behaviours and are aimed at improving a child's ability to self-regulate by reducing parental involvement and consequently, decreasing sleep problems. As PP is concerned with factors that enhance the flourishing and well-being of individuals, sleep interventions, which have been shown to improve aspects of well-being, could contribute to PP interventions that are aimed at enhancing overall parental well-being.

Second wave positive psychology (SWPP) examines the balance between the positive and negative (Lomas & Ivtzan, 2016). Wong (2017) stated that while hardships and despairs are undesirable, they are beneficial in developing character strengths and thus,

essential for becoming fully functioning. Sleep interventions potentially fall within the scope of SWPP as an action that can be conceived as negative, such as a delayed response to a child's signals, can have a positive influence. For example, children's enhanced ability to self-regulate, children's improved sleep and ultimately, parents' improved sleep, thus resulting in enhanced well-being for both child and parents. While it is acknowledged that some parents experience the implementation of sleep interventions as stressful, the shortterm hardship that parents experience may be beneficial in improving parental confidence (Tse & Hall, 2008), which leads to more competent parenting practices. As such, the hardship potentially experienced during sleep interventions generates strength and improved functioning, as described by Wong (2017).

Research has revealed that although parenthood increases overall life satisfaction, this is offset by certain strains associated with parenthood (Pollmann-Schult, 2014). However, there is also an association between diminished satisfaction with life and insufficient sleep (Zhi et al., 2016). As there is a dearth of research on how satisfaction with life changes as a result of the implementation of sleep interventions, research in this regard is required. When considering affect in relation to SWB, the presence of positive affect as well as the absence of negative affect is important. Adverse life circumstances such as chronic sleep deprivation as a result of child sleep problems can result in an affect imbalance (Diener, Diener et al., 2018). In Chapter 3, how sleep interventions decrease negative affect, including anger and frustration, and increase positive affect, for example, joy, consequently restoring the affect balance and directly impacting SWB were explained.

In considering the research conducted to date on sleep interventions and parental well-being, two distinctive issues emerge. First, aside from maternal depression and stress, there is a dearth of research on parental well-being and the implementation of sleep interventions. While the majority of research has been conducted on mothers, only a few studies have focused on fathers and secondary caregivers. Furthermore, there is a severe paucity of research on affect, couple satisfaction and in particular, life satisfaction. The focus of studies has been primarily on improving negative constructs or experiences. Only one study included a positive affective state as an outcome. Furthermore, contradictory results merit further investigation, especially in relation to couple satisfaction.

Second, while most of the research that has been conducted has employed quantitative methods, only a small number of studies have included a qualitative component. Qualitative research has examined parental perception of the implementation of sleep interventions in relation to implementation details, effectiveness, stress and general experiences. However, no qualitative study has probed selected facets of parental well-being specifically. The present study aimed to address this gap. It is important to understand parental experiences of sleep interventions and their influence on well-being because the majority of parents attempting sleep interventions do so outside of a research setting and clear guidelines are needed to assist them. An understanding of parental experiences will allow for the development of guidelines that suit parental needs and capabilities and improve infant sleep. Most importantly, these guidelines are also required to enhance parental well-being. These knowledge gaps and the need for guidelines by considering both maternal and paternal experiences on negative as well as positive constructs are addressed in this study. The methodology employed in this study is discussed in Chapter 4.

# **Chapter 4: Methodology**

# 4.1. Introduction

The purpose of this chapter is to elucidate the methodology that was employed in the current study. To situate the methodology within the research, the research questions and aims had to be considered. As these questions required a quantitative as well as qualitative approach, the study employed a mixed methods research approach. This approach is described and thereafter the specific research design is discussed. Because parental well-being in the context of a sleep intervention was examined in this study, the particular sleep interventions that were employed are explained in detail. Subsequently, the data collection methods and analysis are discussed. Finally, the quality of the research and ethical considerations are discussed.

# 4.2. Research Questions and Aims

The main aim of this study was to explore how the use of sleep interventions affect parental well-being and how parents experience well-being in the context of the implementation of sleep interventions with their infants and young children. Accordingly, two broad research questions were posed:

1. What changes occur in parental well-being after the implementation of sleep interventions for child sleep problems?

In order to answer this research question, a quantitative research approach was employed with the following aims:

- To determine levels of subjective well-being (SWB) as measured through satisfaction with life, positive and negative affect, and couple satisfaction in parents with infants and young children who experience sleep problems;
- To determine the absence of well-being as evident in the incidence of postnatal depression and perceived stress in parents with infants and young children who experience sleep problems;
- To examine changes in parents' levels of satisfaction with life, positive and negative affect, and couple satisfaction after the implementation of sleep interventions; and
- To investigate changes in parents' levels of postnatal depression and perceived stress after the implementation of sleep interventions.

2. How do parents of infants and young children who have chosen to implement sleep interventions experience well-being in the context of the intervention?

To answer this question, a qualitative approach was employed.

The second research aim encompassed findings from both research questions in an endeavour to provide guidelines for supporting parental well-being during the implementation of sleep interventions.

#### 4.3. Research Paradigm

A research paradigm is a belief system that shapes how scholars choose the research questions under investigation and methods to study these questions (Morgan, 2007). Consequently, it guides the researcher's decision on the research design and methods to be employed in a particular study (Creswell, 2014). Paradigms include post-positivism, which espouses a realist belief in an independent, knowable reality, as well as interpretivism, which espouses a relativist notion that the world can only be understood through conceptual frameworks that vary amongst individuals and cultures (Bishop, 2015). In this study, the researcher adopted a pragmatic stance. Pragmatism is a philosophical approach that rejects dualism when thinking about the social world (Barnes, 2012). Thus, pragmatism accepts the existence of both objective and subjective reality, with the understanding that both contribute to a richer understanding of the phenomena under investigation (Barnes, 2012; Creswell & Plano Clark, 2018).

Hence, within the pragmatic approach and taking into consideration the research questions and aims of this study, a mixed methods research design was employed. Given its inherent acceptance of epistemological differences between quantitative and qualitative approaches, pragmatism is a useful approach to overcome the philosophical challenges of mixed methods research (Bishop, 2015). Furthermore, pragmatism advocates for research to produce positive or valuable change within the context of the researcher (Bishop, 2015), thus making it suitable for use in a study grounded in a positive psychology framework.

# 4.4. Research Design

The research questions reflect both a quantitative component that examined how sleep interventions affect parental well-being and a qualitative component in which parents' subjective well-being experiences of implementing sleep interventions were explored. While the quantitative data provided evidence for possible changes in the participants' well-being after the implementation of the sleep interventions, the qualitative data provided a more in-

depth understanding of their experience of well-being in the context of the sleep intervention and any changes to their well-being. Accordingly, the integration of the data enabled the development of guidelines for sleep practitioners to support the well-being of parents who implement sleep interventions. As such, a mixed methods design was deemed most suitable in this study. Bishop (2012) noted that mixed methods research is the utilisation of both quantitative and qualitative approaches, which are integrated in a single study or project. The researcher was of the view that this approach would enable a richer understanding of the influence of sleep interventions on parental well-being.

#### 4.4.1. Rationale for Using a Mixed Methods Approach

The use of a mixed methods research approach minimises the limitations of using a single method of inquiry. Furthermore, by improving the validity of the data through triangulation, the integration of results subsequently affords greater confidence in any conclusions that are drawn (Bryman, 2006; McKim, 2017). As noted in the discussion of the literature in Chapter 3, most prior research on sleep interventions has employed a single method of data collection. In addition, there is a scarcity of qualitative data related to sleep interventions and parental experiences. The researcher thought that the use of qualitative methods would contribute to the body of knowledge on parental experiences of well-being when implementing sleep interventions. Therefore, the need for more comprehensive data collection by specifically focusing on integrating quantitative results with qualitative perspectives to enhance and clarify an understanding of how parental well-being is influenced by sleep interventions was addressed in this study.

# 4.4.2. Multiphase Mixed Methods Design

Mixed methods research can be conducted in several ways, depending on the goals of the study. A multiphase mixed methods design was employed in this study since the quantitative and qualitative components build on each other to allow for the development of guidelines ultimately to support the overall well-being of parents who are implementing sleep interventions. In this approach, the researcher implements both sequential and concurrent strands over several phases in a study to address the overall goal thereof. The purpose of this method is for the quantitative and qualitative components to supplement each other so as to realise the objective of the study (Creswell, 2014). During a multiphase research design, quantitative and qualitative data can be integrated at any point (Creswell & Plano Clark, 2018). As depicted in Figure 1, the present study was conducted in four phases.

During Phase I, quantitative data were gathered electronically, specifically through email by employing a cross-sectional survey design to determine the incidence of SWB, couple satisfaction, depression and perceived stress among the parents of children with sleep problems. Creswell (2014) stated that the aim of a cross-sectional survey design is to draw inferences about a population based on sample results. The information collected from the survey allowed the researcher to establish the parents' incidence of well-being before they implemented a sleep intervention.

The implementation of the intervention took place during Phase II of the study. The parents had an education session with an assigned sleep consultant during which the individualised intervention program was discussed. The parents then implemented the sleep intervention with the support of each sleep consultant, which typically lasted approximately two weeks. The sleep consultants offered support in the form of daily phone calls. Furthermore, throughout the two-week period, they were available telephonically. Further elucidation on the procedure is provided in section 4.2. of this chapter.

In Phase III, during a six- to eight-week follow-up from the start of the intervention, the measuring instruments were administered again. The quantitative data were collected electronically. Subsequently, the data were analysed and compared to the data from Phase I to determine the effect of the intervention on levels of parental SWB, couple satisfaction, depression and perceived stress. Thereafter, the results from this quantitative data analysis were employed to select the sample purposively for the qualitative data collection.

Qualitative data were acquired by conducting telephonic or virtual semi-structured interviews with selected participants so as to explore their experiences of the implementation of sleep interventions and how it affected their well-being between seven and 10 weeks after the start of the intervention. The participants were required to reflect on their well-being both during and after the intervention.

Finally, during Phase IV, the quantitative and qualitative data were integrated to develop and propose guidelines for supporting the well-being of parents implementing sleep interventions. The integration of the quantitative and qualitative data further allowed for corroboration and triangulation of the data, which enhanced the validity of the study (Schoonenboom & Johnson, 2017).

# Figure 1

Outline of Research Design



# 4.5. Ethical Considerations

Research in the social sciences needs to be conducted within the boundaries of ethical guidelines to protect participants from harm. Consequently, it is imperative to consider any ethical issues that could arise from a particular study. Generally accepted ethical considerations include, amongst others, voluntary and informed participation, maintaining participant confidentiality and avoiding adverse consequences (Ritchie et al., 2013). These issues were thus addressed in the present study:

# 4.5.1. Informed Consent and Voluntary Participation

Clients who approached the sleep consultancy voluntarily were fully informed of the nature of the research through a participant information letter in which the purpose and aims of the study were explained and the researcher's contact details provided should they

require further information. Voluntary participation was ensured as the sleep consultants merely provided the information letter and questionnaires to their clients, with no further involvement on their part. If the clients then chose to participate, they emailed their questionnaires directly to the researcher, together with an informed consent letter and permission to be part of the study. During the qualitative data collection, specific consent to audio record the conversations was obtained prior to commencement of the interviews.

# 4.5.2. Maintaining Participant Confidentiality

To protect the confidentiality and anonymity of participants, the use of numeric codes was employed throughout this study and only the researcher had access to the original identifying information. The sleep consultants were only involved to the extent that they educated and supported the participants telephonically with regard to the sleep interventions. They were not involved in the study in any other way, thereby ensuring the confidentiality of the research data. Furthermore, only the researcher had access to the completed data sets, audio recordings and transcribed interviews. Vanclay et al. (2013) stated that care must be taken to ensure that data are stored in such a way that unauthorised access is not possible. Accordingly, the data from this study will be stored electronically in a safe of the Department of Psychology at the University of Pretoria for 15 years at the conclusion of the study.

#### 4.5.3. Avoiding Adverse Consequences

It is of utmost importance to ensure that participants suffer no adverse consequences if they volunteer to be part of a study. Consequently, only sleep interventions that have proven to have no adverse physical or emotional effects on parents or children were used, thereby minimising risk of harm. Trained and experienced sleep consultants, who were supervised by the Africa regional director of the Association for Professional Sleep Consultants, assisted parents during the intervention process. If parents' EPDS score indicated possible depression, they were referred to a health care professional.

Ethical approval for the present study was granted on 28 November 2019 from the Research Ethics Committee of the Faculty of Humanities at the University of Pretoria (see Appendix D).

#### 4.6. Procedure

# 4.6.1. Sampling

**4.6.1.1. Population and Setting.** The target population was parents of children with sleep problems who voluntarily approached a sleep consultancy operating in Southern Africa for assistance. Although the countries included South Africa, Botswana, Zimbabwe and Namibia, a small number of parents approached the consultancy from outside of Southern Africa, for example, from Mauritius and the United States of America. The parents all had children ranging from three months to five years of age.

The following inclusion criteria were employed: parents of children with sleep problems, willingness to implement sleep interventions in order to improve child sleep, willingness to participate in the study and being in a committed relationship with their partner. In addition, the children had to be between the ages of three months and five years because implementing sleep interventions in children under three months is not recommended as they may not weigh enough or have sufficient neural maturation to allow for long periods of consolidated sleep (Hiscock & Davey, 2018). Finally, participants needed to be parents over the age of 20 years. Young parents often experience decreased levels of well-being due to early pregnancy or financial difficulties (Aassve et al., 2012). The exclusion criteria were as follows: parents of children with medical conditions that cause sleep problems such as sleep apnoea, and children with neurological conditions that have an impact on sleep, for example, children who are classified within the autism spectrum.

**4.6.1.2. Sample Description.** Purposive sampling was employed to select the participants for Phase I of the study. In other words, the participants were selected intentionally based on their experience of a central phenomenon (Creswell, 2014). In the case of the present study, the phenomenon was the implementation of sleep interventions to resolve their child's sleep problems. After the parents had decided to engage the services of the sleep consultancy, they were informed of the research and invited to participate. The research information and questionnaires were provided electronically via the sleep consultants to minimise selection bias on the part of the researcher. Parents who were willing to participate in the study were requested to return the questionnaires electronically. During this phase, the sample comprised 119 participants.

In Phase III, follow-up questionnaires were sent to those who had participated in Phase I. A total of 77 participants elected to return these follow-up questionnaires.

Therefore, the attrition at follow-up was 32%. Although the attrition rate increases the risk of attrition bias, the triangulation of quantitative and qualitative data reduces potential treats to internal validity (Leung, 2015). It is important to note that as data collection took place between 1 March 2020 and 10 February 2021, the Covid-19 pandemic had a severe impact on follow-up response rates. The participants reported difficulty accessing relevant technological equipment such as computers and printers as well as difficulties encountered during the lockdown as determinants of non-response during follow-up. They also gave lack of time and work, and family responsibilities as reasons for their withdrawal. Although none of the participants who were contacted for follow-up admitted that they had withdrawn because the intervention had not been successful, this is possible. The quantitative data that were collected related only to mothers because none of the fathers completed the questionnaires in Phase I and Phase III. Although attempts to collect such data were made by emailing the fathers personally, no responses were received.

A combination of nested sampling and snowball sampling was employed to obtain participants for qualitative data collection. Schatz (2012) noted that nested sampling involves identifying participants for semi-structured interviews from survey participants. Accordingly, a sample of nine mothers was selected from those who had participated in Phase I, based on the categories outlined in section 4.5.4. of this chapter. By employing snowball sampling, that is, a sampling procedure where members of a population are asked to identify other members of the population (Handcock & Gile, 2011), the mothers who had participated in Phase III were asked to identify fathers that might be willing to be interviewed. Two fathers consented to be interviewed during Phase III and thus, the qualitative data reflected both mothers and fathers' experiences. Therefore, a total of 121 parents consented to participate across all phases of the study.

**4.6.1.3. Participants.** The participants for Phase I and III of this study (n = 121) represented parents of children with sleep problems. As depicted in Table 2, the participants were between the ages of 23 and 44 years. The majority were South African (84.3%). The children in the intervention ranged between three and 35 months of age, with a mean age of 9.32 months. Most of the participants were implementing the sleep intervention with their first (65.3%) or second (28.1%) child.

# Table 2

Demographic Information of Particip	pants in Phase I and III ( $n = 121$ )
Domographic verichle	2

Demographic variable	n	%
Gender		
Female	119	98.4%
Male	2	1.6%
Age of parents		
<30	22	18.2%
30-35	66	54.5%
36-40	28	23.1%
>40	5	4.1%
Country		
South Africa	102	84.3%
Zimbabwe	11	9.1%
Namibia	4	3.3%
USA	2	1.7%
Botswana	1	0.8%
Mauritius	1	0.8%
Age of child(ren) in sleep		
intervention		
3 – 8 months	69	57%
9 – 13 months	30	24.8%
14 – 24 months	22	18.2%
Number of children in the		
household		
1 child	79	65.3%
2 children	34	28.1%
3 children	7	5.8%
4 children	1	0.8%

The demographic information of participants in Phase I and Phase III is provided in Chapter 5.

**4.6.1.4. Sleep Intervention Procedure.** The sleep interventions were implemented in Phase II of the study. Prior to meeting with the family, the sleep consultants obtained the child's medical information in order to rule out any pre-existing medical or neurological conditions that could affect sleep. The sleep consultant also obtained information related to the child's present sleep patterns and problems, sleep associations, daytime and night-time routine, diet, temperament, growth, sleep environment and responses to sensory stimulation as well as parental expectations of sleep interventions. The sleep consultant designed a personalised extinction-based intervention program, which took the relevant information into consideration. The program was either pure graduated extinction (GE), extinction with parental presence (EwPP) or a combination of both. Subsequently, the sleep consultants met with the parents on a virtual platform for a session of approximately two hours. During the consultation, the parents were educated on age-appropriate sleep patterns, sleep associations, the sleep environment, nutritional requirements related to sleep, positive bedtime routines and sleep hygiene. The consultants also explained the intervention plan that the parents were to implement, which was open to modification if the parents or sleep consultant thought it was necessary. Modifications could include, for example, the continued use of a dummy and decreased length of time between signal and response.

Although there was a measure of inherent variability in the intervention programs because each program caters for a family's specific circumstances, the basic process for each intervention remained the same. During a GE intervention, parents were instructed to place the child in bed after a positive bedtime routine and then leave the room for a set period of time, which was dependent on the child's age and parents' preference, before responding briefly with minimal interaction if the child did not settle after the set time. Interaction could be verbal such as "It's okay, mommy's here" or making a "Shh" sound, or physical, for example, patting the child's shoulder. If the child did not settle, the interaction could be escalated. For example, parents could start with verbal reassurance uttered from the doorway, which could then be escalated to verbal and physical reassurance in the cot. Eventually the parents could pick the child up even though they were discouraged from this final step as the stimulation could increase wakefulness. GE was only implemented in children who were a year or older.

During EwPP, parents gradually withdrew their presence during bedtime after always starting with a positive bedtime routine over the course of approximately nine nights. During the first three nights, they were typically instructed to remain next to the child by either sitting or standing next to the child's cot or bed. If the child signalled, parents could respond with a verbal or physical reassurance. Similar to GE, they could escalate their response if

necessary. For the following three nights, parents moved away from the child's bed or cot, but remained in the room and continued with verbal reassurances as required, but only employed brief physical reassurances if deemed necessary. Finally, on the following three nights, parents left the child's room after the positive bedtime routine, but employed verbal and physical reassurances if required.

During the combined program, parents usually started with EwPP and subsequently switched to GE. This usually occurred because EwPP was taking longer than expected. On the other hand, some parents started with GE and switched to EwPP due to personal preferences. A sleep consultant could also suggest switching to EwPP if the child did not settle within a few days of attempting GE.

As noted previously, the sleep consultants were available telephonically between two and three weeks from the start of the intervention. Parents could contact the sleep consultant at any time during the day or night to receive feedback and guidance. The parents were also encouraged to send WhatsApp voice notes of their child's cries if they were distressed and needed assistance related to when to respond. The sleep consultants were available to reinforce what the parents had learned, offer support and recommend modifications when required. Modifications, for instance, could involve changes in routine such as number of daily naps, time of daily naps and supper time. The modifications could also comprise changes to the intervention itself, for example, duration of waiting before responding to signals and when to advance to the next phase of the intervention. Finally, modifications could encompass changing from GE to EwPP or *vice versa*. Parents were encouraged to send sleep logs to the consultants so the latter could monitor progress. Furthermore, they contacted the parents telephonically every morning to enquire about the previous night.

### 4.6.2. Data Collection

**4.6.2.1. Timing of Data Collection.** The purpose of the study was to explore how child sleep interventions affect the well-being of parents. Accordingly, while the quantitative data were collected pre- and post-intervention, the qualitative data were acquired after the individual analysis of the quantitative data. Parents completed the pre-test questionnaires within a week prior to the implementation of the sleep intervention to ensure that a baseline for well-being was established. The intervention lasted approximately two weeks, but this was dependent on how quickly modification of the child's sleep occurred. Subsequently, the parents completed the post-test questionnaires six to eight weeks after the implementation of the sleep intervention.

It was deemed that enough time would have elapsed for parental sleep to improve and therefore, potentially influence well-being after a six- to eight-week period. Individual analysis of the quantitative data revealed which participants could be interviewed so as to acquire qualitative data collection. Although no fathers participated in the quantitative phase of the study, interviews were conducted with two fathers during the qualitative phase to ensure perceptions reflected in the data represented both genders. Semi-structured interviews were conducted within two weeks after the second quantitative data collection to ensure the participants recalled their experiences accurately.

**4.6.2.2. Quantitative Data Collection.** During Phase I and Phase III, the quantitative validated measuring instruments were employed to collect the data. The participants and their children's demographic information was obtained from the information questionnaire the sleep consultants utilised and sent to the researcher together with the completed measuring instruments. The questionnaires were presented electronically to the participants during both phases, together with an information letter explaining the purpose of the study and a consent form to ensure voluntary participation (Appendices A and B). All the information presented to the participants was in English. The willing participants completed and returned the questionnaires electronically.

Several measures of well-being related to the facets discussed in Chapter 3 were employed in the study. The measures, which included self-report measures, were deemed appropriate for use because of the subjective nature of well-being (Diener et al., 2002). The quantitative data that were collected during Phase I and Phase III included the following questionnaires:

*The Satisfaction with Life Scale (SWLS)* is a 5-item instrument designed to measure global life satisfaction (Diener et al., 1985). The scale was originally developed as a brief assessment of satisfaction with life in general and has since been widely used to measure the life satisfaction component of SWB (Pavot & Diener, 2008). The scale does not assess specific domains such as satisfaction with health or finances, but rather allows respondents to weight such domains subjectively within their global life satisfaction judgements (Pavot & Diener, 1993). For example, *In most ways my life is close to ideal* and *I am satisfied with my life* are two items on the scale. Items are evaluated on a 7-point Likert scale, with total scores ranging between 5 and 35. Respondents who score between 5 and 9 are extremely dissatisfied with life, while those who score between 30 and 35 are extremely satisfied with

life. The midrange of 20 to 24 is an indication of general satisfaction, but with areas that need improvement (Pavot & Diener, 2008). The SWLS has demonstrated good internal reliability and test-retest reliability (Pavot & Diener, 2008) and has been validated for use in South Africa (Wissing et al., 2008). A mean Cronbach alpha coefficient of 0.78 has been determined in prior studies (Corrigan et al., 2013). In the present study, a Cronbach alpha coefficient of 0.85 was obtained. The SWLS was used to evaluate the cognitive-evaluative component of SWB in this study.

The Scale of Positive and Negative Experience (SPANE) broadly measures the frequency of positive and negative affect experienced by an individual during the previous four weeks (Diener et al., 2010). Higher levels of SWB are associated with the experience of higher levels of positive affect, lower levels of negative affect and a high degree of satisfaction with life (Deci & Ryan, 2008). Studies that attempt to measure SWB should thus include a measure of positive and negative affect. Therefore, the SPANE was considered suitable for inclusion in the present study. The SPANE was developed in response to shortcomings of previous measures of affect and includes broad descriptors of positive and negative feelings, for example, pleasant or unpleasant as well as more specific positive and negative emotions such as joyful and sad (Diener et al., 2010). It comprises two subscales: one for positive and the other for negative affect. Both of the subscales have six items and respondents are required to rate their affective experiences on a scale, ranging from 1 to 5, where 1 denotes very rarely or never, and 5 denotes very often or always. Scores for each of the positive and negative subscales range from 6 to 30. The affective balance score, which is attained by subtracting the negative from the positive subscale total, ranges from -24 (high negative affect) to 24 (high positive affect). Therefore, the SPANE can be used to determine positive affect, negative affect and overall affect balance, all three of which were deemed necessary for the purpose of this study. The SPANE is useful for measuring affective wellbeing and has been found to be a suitable predictor of SWB (Jovanović, 2015). Both the reliability and validity of the SPANE have been confirmed (Howell & Buro, 2015) and the scale has been validated for use in South Africa (Du Plessis & Guse, 2017). The SPANE has obtained Cronbach alpha coefficients ranging from 0.81 to 0.90 (Diener et al., 2010). In the current study, internal consistency was 0.93 for the SPANE-P, 0.87 for the SPANE-N and 0.93 for the SPANE B. In this study, the participants' score on the SPANE was employed to indicate the absence or presence of well-being as evident in the level of positive and negative emotion as well as affect balance.

*The Couples Satisfaction Index (CSI-16)*, which is a 16-item measure designed to assess relationship satisfaction among intact couples, was developed to provide a more

precise indication of such satisfaction than had previously been possible with other measures (Funk & Rogge, 2007). The measure is appropriate for use in a range of couples, namely, married, co-habiting, dating or engaged couples as it was developed to assess relationship satisfaction within intact romantic relationships (Funk & Rogge, 2007). The CSI-16 was selected for use in the present study because it is not limited to married couples. The scale comprises varying response scales. While nine items are assessed on a 6-point Likert scale and one item on a 7-point Likert scale, six of the the items that describe the relationship are evaluated on a 6-point bipolar adjective scale. Two such items include How rewarding is your relationship with your partner? and In general, how satisfied are you with your relationship? The items are summed, with total scores ranging from 0 to 81 and higher scores signifying higher relationship satisfaction. Scores below 51.5 are indicative of relationship dissatisfaction (Funk & Rogge, 2007). The CSI-16 has demonstrated good reliability and validity (Funk & Rogge, 2007; Mattson et al., 2013), with Cronbach alpha coefficients found to be 0.98. The current study obtained a Cronbach alpha coefficient of 0.96. Items from the CSI-16 have been employed successfully in South African studies as well as studies in sub-Saharan Africa (Johnson et al., 2021; Tuthill et al., 2020). In this study, the participants' score on the CSI-16 was used to denote the presence of well-being as evident in the level of couple satisfaction.

The Perceived Stress Scale (PSS-10) is a 10-item instrument that measures the degree to which individuals perceive situations as stressful as well as how unpredictable, uncontrollable and overloaded they experience their lives (Cohen et al., 1983). The original instrument comprised 14 items but was later shortened to 10 items after factor analysis was conducted (Lee, 2012). Items are evaluated on a 5-point Likert scale, with higher total scores indicating greater perceived stress. An example of an item that measures how unpredictable respondents experience their lives is In the last month, how often have you been upset because of something that happened unexpectedly? An example of a negatively scored item that assesses how uncontrollable respondents perceive their lives is In the last month, how often have you felt confident about your ability to handle your personal problems? PSS scores range between 0 and 40, where scores of 13 and under are considered to signify low stress, scores between 14 and 26 moderate stress and scores between 27 and 40 high stress (Bhat et al., 2011). The PSS-10 has been found to be reliable and valid (Roberti et al., 2006). A review of the psychometric properties of the PSS-10 revealed that Cronbach alphas range between 0.74 and 0.91 (Lee, 2012). In the current study, a Cronbach alpha coefficient of 0.90 was obtained for the scale. Overall, the psychometric properties of the PSS-10 have been found to be superior to those of the original PSS-14 (Lee, 2012). The PSS-10 has also been employed successfully in South African populations (Fjeldheim et al., 2014), thus

making it appropriate for use in the present study. In this study, the participants' scores on the PSS-10 were used to denote the absence of well-being as evident in the level of perceived stress.

The Edinburgh Postnatal Depression Scale (EPDS) is a 10-item instrument that is utilised to screen parents at risk for PND (Cox et al., 1987). The instrument measures experiences during the previous seven days on a 4-point Likert scale, with positive and negative items. While I have looked forward with enjoyment to things is an example of an item that is scored positively, I have felt sad or miserable is an example of one that is scored negatively. Items are scored on a scale ranging from 0 to 3, with total scores varying between 0 and 30. While scores between 0 and 6 are classified as no or minimal depression, those between 7 and 13, 14 and 19, and 19 and 30 are classified as mild depression, moderate depression, and severe depression, respectively (McCabe-Beane et al., 2015). The EPDS has a high level of test-retest reliability (Kernot et al., 2015) and has been validated for use in South Africa (Lawrie et al., 1998; van der Westhuizen et al., 2018). The EPDS was originally intended to screen mothers for depression during the postnatal period, which is thought to last up to six months after birth (Romano et al., 2010). The EPDS has also been validated for use in non-postnatal women with older children (Cox et al., 1996). The Cronbach alpha coefficient was demonstrated to be 0.87 (Cox et al., 1987). In the present study, a Cronbach alpha coefficient of 0.83 was obtained for the scale. In this study, participants' scores on the EPDS were employed to indicate the absence of wellbeing as evident in the level of depression.

**4.6.2.3. Qualitative Data Collection.** To shed light on how parents' well-being changed after the implementation of a sleep intervention, semi-structured interviews were conducted with 11 participants, specifically nine mothers and two fathers. The use of the individual interviews allowed for a rich understanding of the participants' experience of the sleep intervention and its influence on their well-being. It further afforded the researcher the opportunity to ascertain why and how the intervention potentially led to a change or no change in well-being.

Only mothers with completed quantitative data sets during Phase I and III were considered for interviews. Creswell (2014) noted that in-depth interviews allow researchers to understand quantitative data more comprehensively by using such qualitative follow-up data. The parents were selected for interviews based on the initial analysis of the individual quantitative data. To acquire a holistic understanding of potential changes to parental wellbeing, interviews were conducted with the following participants: parents whose well-being was lowest during Phase I, with a high incidence of PND, negative affect and perceived stress and a low incidence of positive affect and life and couple satisfaction; parents whose well-being did not change significantly between the two phases; parents whose well-being fell in the mid-range; and parents whose well-being was highest during Phase I. While mothers were purposely selected for the interviews in accordance with the categories above because they had completed the quantitative data, fathers were included based on their willingness to participate.

In accordance with the participants' availability, the interviews were conducted within two weeks of completing the post-test questionnaires. The same timeline was maintained for the fathers, that is, they were requested to participate upon receiving quantitative post-test data from the mothers and the interviews were then scheduled during the same week. Interviews were conducted telephonically and on virtual platforms such as Google Meet since face-to-face interviews were not possible during the Covid-19 pandemic. Interviews were conducted in English and audio recorded with consent. The interviews lasted between 20 and 60 minutes. Questions were open-ended and referred to participants' general experience of the sleep interventions as well as their experiences regarding their well-being both during and after the sleep intervention. Questions further referred to factors that might have aided or hindered their well-being during the implementation of the interventions and how the journey could have been made easier. Finally, participants were asked to share what else may have affected their well-being in the preceding few weeks so as to account for any potentially confounding factors. The semi-structured interview guide is attached as Appendix C.

#### 4.6.3. Data Analysis

**4.6.3.1. Quantitative Data Analysis.** All responses that were received during Phase I were analysed to reveal the incidence of well-being in parents of children with sleep problems, as measured through the five facets described above. All the mothers did not complete every measure. Much of the missing data originated from the pre-test questionnaires, with mothers only partially completing some of the measures. This was especially prominent in the EPDS and CSI-16. These incomplete data sets were subsequently excluded pairwise in order to prevent skewing of the data. The relevant data were captured on an Excel spreadsheet. Individual participant scores were determined for the pre-test of each of the five measures. Participants were identified numerically.

A total of 77 post-test questionnaires were received for analysis during Phase III. The data were captured on a separate Excel spreadsheet, with individual participant scores determined for the post-tests for each of the five measures. As with Phase I, not all data sets were fully completed and thus, the the missing data were dealt with by excluding the cases pairwise to allow for analysis of the completed scales.

Subsequently, the data for Phase I and III were imported to a data file for analysis. The statistical software SPSS (Version 27) was employed to determine the incidence of wellbeing, as measured through the five facets described above (n = 119) and to determine whether and how responses on each of the five measures changed after the intervention (n = 77). Descriptive and inferential statistical analyses were performed. Descriptive statistics, including means and standard deviations, were calculated for each of the measures during Phase I to determine the incidence of well-being in parents of children with sleep problems. A paired *t*-test is the prevailing method for comparing two dependent groups (Wilcox, 2017) or comparing differences within a single sample (Kim, 2015), which was the case in the present study. Therefore, this statistical procedure was deemed appropriate as it was necessary to analyse data generated from each measure in Phase I and Phase III. Due to the nature of the constructs being measured and the assumption or normality underlying the use of the paired-samples t-test, it was considered essential to assess whether the scores were normally distributed by employing the Shapiro-Wilk test for normality. The Wilcoxon signed rank test, as the non-parametric alternative of the paired t-test, was employed to analyse relevant measures that did not meet criteria for normality.

**4.6.3.2. Qualitative Data Analysis.** Thematic analysis is a useful qualitative tool that can provide rich and complex accounts of data. It may be defined as "a method for identifying, analysing, and interpreting patterns of meaning ('themes') within qualitative data" (Clarke & Braun, 2017, p. 297), with a focus on the researcher's reflective engagement with the data and the analytical process (Braun & Clarke, 2019). Therefore, thematic analysis was suitable for analysing how the participants experienced the implementation of sleep interventions as well as any changes to their well-being. In order to analyse the data without bias towards existing knowledge, an inductive approach was followed in which themes were linked to the data without attempting to enforce a pre-existing coding frame or analytic preconceptions (Braun & Clarke, 2006). However, a deductive approach was also followed to ensure that the research questions were addressed. The interviews for the qualitative component were transcribed and subsequently, analysis was conducted in accordance with the following six phases outlined by Braun and Clarke (2006; 2019):

- Phase 1 Familiarisation with the data. The researcher conducted the interviews and
  personally transcribed them, which comprised the first step in familiarisation with the
  data. Nevertheless, it was still important to immerse oneself and become familiar with
  all aspects of the data. Accordingly, the researcher reread the entire data set of
  interviews after they had been transcribed.
- Phase 2 Generating initial codes. The researcher studied the data set and coded information manually that appeared interesting and/or relevant in a detailed line-by-line approach. The researcher attempted to maintain an unbiased, data-driven analysis in an endeavour to acquire an enhanced understanding of the participants' experiences. During phase 2, to enhance the quality of the study, a set of three interviews was provided to an external academic scholar who was proficient in qualitative analysis for separate coding and generation of initial themes. This was done to ensure the reliability of the qualitative analysis. Codes that were highlighted by the external academic scholar were incorporated in all the interviews. These initial codes were subsequently organised into more meaningful categories as defined by the researcher.
- Phase 3 Generating initial themes. Using the categories generated from phase 2, the researcher subsequently analysed the codes for themes and sub-themes. The researcher focused particularly on how the participants experienced the implementation of sleep interventions and any factors related to their well-being.

Themes were coded both latently, focusing on the "underlying ideas, assumptions, and conceptualisations" within the data and semantically, where the researcher did not attempt to interpret the data for any underlying meaning (Braun & Clarke, 2006, p. 13).

- Phase 4 Reviewing themes. The themes that were generated during phase 3 were subsequently reviewed to determine whether they were clear and identifiable. They were then, through the creation of a thematic framework, examined in relation to the entire data set to determine whether they reflected the data accurately and if any themes had been overlooked.
- Phase 5 Defining and naming themes. During this phase, the initial themes were refined and named to ensure that the themes reflected the essential nature of the data.
- Phase 6 Producing the report. During this final phase of analysis, a qualitative data report in which themes were discussed within the context of the data was produced. During this phase, final categories were merged or moved within the thematic framework.

# 4.7. Research Quality

When reporting the results of a study, it is imperative to establish the quality of the research. While internal threats to validity impede the researcher's ability to obtain accurate inferences from the data, external threats include incorrect inferences that are generalised beyond the sample group (Creswell, 2014). Rigorous research was ensured throughout this study, both in relation to the method employed as well as through the measures employed. Creswell (2014) asserted that a mixed methodology enhances the validity of the results. Furthermore, utilising multiple sources of quantitative and qualitative data improves the quality of the research.

Although the one-group pre-test post-test design employed in the *quantitative* phase of this study was beneficial in enhancing the quality of quasi-experimental research, it was still prone to internal threats to validity such as selection bias and history. Selection bias was minimised during this phase of the study as the researcher did not directly approach the population. Instead, information on the study and the pre-test questionnaires were disseminated to all parents engaging the services of the sleep consultancy via the sleep consultants. Participants within the population then voluntarily chose to participate in the study.

Another potential internal validity threat, i.e., history, warrants further consideration. Events that occur as time passes during an experiment can influence the outcome beyond the experimental treatment (Creswell, 2014). In the present research, there was a six- to eight-week lapse between the collection of the pre-test and post-test quantitative data. During this time, events that could have influenced the results of the post-test data may have occurred. One such major event was the Covid-19 pandemic. Although a global phenomenon, individuals might have been affected differently, for example, through socioeconomic factors, illness, or loss of family members. The study was conducted shortly after the onset of the pandemic and all the data were collected during the pandemic. Due to the stressful nature of the pandemic, it is possible that responses on the quantitative measures may have been affected during post-test data collection if the participants had experienced any critical events related to the pandemic after the pre-test data collection.

During Phase I and Phase III of the study, quality was ensured by employing validated measuring instruments. The reliability of the measures was also determined to ensure internal consistency. While self-report measures are reliable (Schimmack & Oishi, 2005), it should be noted that well-being judgements could be affected by factors such as current mood and the day of the week; for instance, people tend to be less happy on a Monday (Diener, Oishi et al., 2018). To counteract such effects, the present study did not send the post-test questionnaires on Mondays. Moreover, the participants were requested to complete the questionnaires at a time most suitable for them during the ensuing week.

When collecting *qualitative* data, it is important to ensure that the researcher's interactions are standardised (Creswell & Plano Clark, 2011). The researcher, therefore, followed the same protocol during each interview. The researcher conducted all the interviews by using the same interview guide and thus, progression of questions. The trustworthiness of the qualitative research also merits further discussion. Trustworthiness, which refers to whether the findings of qualitative research can be trusted, includes the following criteria: credibility, transferability, dependability and confirmability (Lincoln & Guba, 1985). Credibility determines whether the participants' original views are accurately reflected in the research findings and includes strategies such as prolonged engagement and triangulation. Transferability is the degree to which the findings from one study can be applied to other studies and thus, rich descriptions of the reliable documentation of the

research process, confirmability is the degree to which the research findings can be replicated and entails keeping an audit trail. Finally, reflexivity requires researchers to examine their own beliefs, assumptions and values as well as how this could influence the research (Korstjens & Moser, 2018; Moon et al., 2016). The following strategies were employed to ensure quality and trustworthiness in the qualitative phase of this study and encompass the criteria for trustworthiness:

# • Triangulation

Data were collected and analysed from different sources, specifically the psychological questionnaires and individual semi-structured interviews as well as multiple individuals so as to explore SWB, couple satisfaction, perceived stress and depression in the context of child sleep interventions (data triangulation). To enhance the trustworthiness of the generated themes during qualitative analysis, an academic scholar experienced in qualitative research methods analysed three interviews separately (investigator triangulation). Participant names were removed to ensure confidentiality during this stage of the study. Two separate interview transcripts were also peer reviewed by the researcher's supervisor and co-supervisor.

### • Rich descriptions

The research context is described in detail in Chapter 5. The rich biographical data of the participants as well as the details of the sleep intervention procedure allowed the experiences described in the findings to be meaningful within the relevant context. In addition, a detailed description of the research process employed in this study in which the role of the researcher, sleep consultants and sleep intervention procedure were elucidated is presented in this chapter. Furthermore, in this chapter, the data collection methods, analysis and interpretation have been discussed in depth. Moreover, records were kept throughout the study to serve as an audit trail.

#### • Reflexivity

The researcher is a mother of young children and was therefore cognisant of how her experiences might influence the findings. To counteract any potential bias, the researcher kept a research diary and maintained ethical mindfulness during the data collection as well as the data analysis. This is discussed in Chapter 6.

• Present negative and discrepant information

Finally, the researcher included and discussed instances where participants' experiences differed from or did not support the prevailing perception of a theme. This was done to ensure a rich and nuanced perspective of the phenomenon and added to the credibility of the findings.

# 4.8. Conclusion

In this chapter, the background and aims of the study were discussed and an explanation of the methodological approach and multiphase mixed methods research design provided. The sampling and sleep intervention procedure, data collection methods and analysis employed in the study were outlined. Finally, the quality of the study and ethical considerations were discussed. The results from the data analysis, together with the interpretation of the analysis of both the quantitative and qualitative data, are discussed in Chapter 5.

#### **Chapter 5: Results and Discussion**

# 5.1. Introduction

In this chapter, the results of the analysis of the data are presented and discussed. In the first section, the incidence of well-being among parents of children with sleep problems and the changes that occurred in parental well-being after the implementation of the sleep intervention are detailed. Thus, the results of the quantitative data obtained during Phases I and III of the study are presented. In the second section, the experience of parents who implemented a sleep intervention, with a particular focus on changes to their well-being in the context of the intervention, is described and discussed. Therefore, the qualitative results obtained during Phase III of the study are presented and discussed.

# 5.2. The Incidence of Parental Well-Being Among Mothers of Children with Sleep Problems

The broad research aim of this study was to examine well-being in parents who were implementing sleep interventions. Contrary to expectations, it proved difficult to recruit fathers to participate in the study. The researcher endeavoured to acquire fathers to be participants, but despite sending them several email requests directly, no fathers elected to complete the questionnaires during Phase I. This is not unique in research on child sleep: sample sizes are often skewed towards mothers (e.g., Germo et al., 2007), fathers often opt not to participate (e.g., Maume et al., 2010) and only mothers complete a certain phase of the study (e.g., Bernier et al., 2013). This raises an important question regarding the gendered nature of child rearing and specifically, the parental management of child sleep and sleep problems. Scholars have acknowledged that mothers are more dominant in managing child sleep (Maume et al., 2010; Tikotzky et al., 2015; Venn et al., 2008). In spite of this, Ball et al. (2000) found that 25% of fathers alternated nights with mothers and Goodlin-Jones et al. (2001) revealed that in 38% of families both parents assisted during infant night-wakings. On the contrary, Venn et al. (2008) found that in general, fathers of young children did not assist during the night, with the exception of when their children were ill. The latter as well as the fact that children with medical and/or neurological conditions were excluded from this study might explain the lack of paternal involvement in this phase of the study. It is therefore important to note that the quantitative findings only reflect the wellbeing of mothers and should be interpreted accordingly.

#### 5.2.1. Demographic Information

In Table 3, the demographic information of the participants during Phase I (n = 119) is displayed. The majority of mothers were South African (84%), which was to be expected

as the sleep consultancy is situated in the country. The parents' age ranged between 23 and 44 years. Their mean age (M = 32.83; SD = 4.09) was similar to that observed in previous studies (e.g., Smart & Hiscock, 2007; Tse & Hall, 2008). The ages of the children in the sleep intervention ranged between three and 35 months, with a mean age of 9.34 months (SD = 5.70). In comparison to previous research, only a few studies have included infants younger than six months old (Reuter et al., 2020).

# Table 3

Variable	n	%
Age		
<30	22	18.5
30-35	65	54.6
36-40	28	23.5
>40	4	3.4
Country		
South Africa	100	84%
Zimbabwe	11	9.2%
Namibia	4	3.4%
United States of America	2	1.7%
Botswana	1	0.8%
Mauritius	1	0.8%
Age of child(ren) in sleep intervention		
3 – 8 months	68	57.1
9 – 13 months	29	24.4
14 – 35 months	22	18.5
Number of children in the household		
1 child	79	66.4
2 children	32	29.9
3 children	7	5.9
4 children	1	0.8

Demographic Information of the Participants in Phase I (n = 119)

# 5.2.2. Descriptive Statistics

During Phase I of the study, approximately one week before the implementation of the sleep intervention, the participants completed measures to determine the incidence of well-being. The measures were not fully completed by all participants. The sample size,
means, standard deviations, score range and reliability for all scales are presented in Table 4.

## Table 4

The Incidence of Subjective Well-Being among Mothers Before the Implementation of the Sleep Intervention

Measure	n	М	SD	Observed	Cronbach's
				range	alpha
					coefficient
SWLS	114	27.68	4.88	11–35	0.85
SPANE-P	112	22.54	3.78	14–30	0.93
SPANE-N	112	15.37	4.40	6–26	0.87
SPANE-B	112	7.16	7.65	-11–24	0.93
CSI-16	103	63.77	11.85	25–80	0.96
EPDS	105	9.16	4.49	1–22	0.83
PSS-10	117	18.76	7.48	2–35	0.90

*Note.* SWLS = Satisfaction with Life Scale; SPANE-P = Scale of Positive Experience; SPANE-N = Scale of Negative Experience; SPANE-B = Affective Balance; CSI-16 = Couple Satisfaction Index; EPDS = Edinburgh Postnatal Depression Scale; PSS = Perceived Stress Scale.

Cronbach's alphas were calculated to determine the internal consistency of the measures. All the measures demonstrated high internal consistency. As shown in Table 4, fewer participants completed the measures for postnatal depression and couple satisfaction. While the EPDS had in many instances not been completed at all, the CSI-16 had only been partially completed. Potential reasons for the non-completion include the presence of depression, as it has been demonstrated that mental disorders are associated with the non-response of health-related questionnaires such as those employed in this study (Dupuis et al., 2019; Torvik et al., 2012), the decision not to complete measures if participants did not perceive any problems in those areas (Dupuis et al., 2019) and fatigue, which has similarly been associated with the non-completion of questionnaires (Meese et al., 2011). In addition, the length of scales needs to be considered. It is likely that exhausted mothers did not have the energy to read and answer all the questions in the 16-item CSI-16, which was the longest questionnaire.

#### 5.2.3. Levels of Subjective Well-Being in Mothers of Children with Sleep Problems

The first aim of the study was to determine the presence of subjective well-being (SWB) among parents of children with sleep problems. While SWB was measured by employing the SWLS and SPANE P, couple satisfaction, an indicator of well-being as operationalised in this study, was measured with the CSI-16. The results of the pre-tests for each of the indicators are thus outlined.

**5.2.3.1. Satisfaction with Life.** The mean score for the SWLS was 27.68 (*SD* = 4.88), thus indicating that, overall, the participants were satisfied with life despite their child's sleep problems. While a small number of participants exhibited dissatisfaction (3.4%) or below average satisfaction with life (0.8%), 19 participants demonstrated general satisfaction (16%). The majority of participants (75.6%) displayed satisfaction with life (37.8%) and extreme satisfaction with life (37.8%). Although their mean score (M = 27.68) was lower than that reported in earlier studies among mothers six months post-partum (M = 28.9), it was comparable to the mean score of mothers three years post-partum (M = 27.21) (Aasheim et al., 2014).

Given the impact of stress and mood on life satisfaction (Extremera et al., 2009; Fergusson et al., 2015), this finding was unexpected. While there is a paucity of studies on parents' life satisfaction when their children present with sleep problems, previous studies that have evaluated parents' life satisfaction have revealed inconsistent results on whether satisfaction increases, decreases or remains the same (Nelson et al., 2014). For example, whereas data from the German Socio-Economic Panel indicated that life satisfaction increases during early parenthood (Baetschmann et al., 2016), data from the Russia Longitudinal Monitoring Survey revealed that although life satisfaction does not increase during the first two years after the birth of the first child, it increases after the birth of the second child (Mikucka, 2016). Conversely, the Swiss Household Panel Data showed that maternal life satisfaction is correlated negatively with the birth of the second child (Mikucka & Rizzi, 2020). Previous research has shown that several moderating factors may contribute to the variance of parents' life satisfaction scores, including, amongst others, unplanned pregnancies (Baetschmann et al., 2016; Mikucha, 2016), maternal age at birth (Aasheim et al., 2014) and paternal involvement (Agache et al., 2014).

With regard to the high incidence of life satisfaction in the present study, motherhood has been associated with substantial enhancements in life satisfaction (Baetschmann et al., 2012). Prior research has also established that single parents have lower life satisfaction than partnered parents (Lee et al., 1999; Pollmann-Schult, 2018) and that life satisfaction

decreases when individuals separate (Qu & de Vaus, 2015). Because one of the inclusion criteria in the present study was that parents had to be in a committed relationship, the partnered status of the participants may explain the higher incidence of life satisfaction amongst them. In addition, the mothers' mean age was over 30 years. Aasheim et al. (2014) revealed that parents who are older at the birth of their child tend to experience higher life satisfaction.

**5.2.3.2. Positive Affect.** The SPANE comprises two subscales, one for positive and one for negative affect. This allowed the researcher to determine the participants' affective balance. In relation to SWB, an affective balance skewed towards the positive, that is, the experience of more positive affect than negative affect is important (Deci & Ryan, 2008; Diener, Tay, et al., 2017). Accordingly, the results of the positive and negative subscales are presented individually, and positive affect was regarded as reflecting the presence of SWB.

The participants' mean score on the SPANE Positive scale (SPANE P) was 22.54 (SD = 3.78), which indicated that they experienced high positive affect frequently. While a small number of participants (17.6%) reported moderate to low positive affect, with scores of 18 and under, the majority (76.5%) revealed moderate to high positive affect, with scores ranging between 19 and 30. Furthermore, analysis demonstrated a positive affective balance (M = 7.16, SD = 7.65), thus indicating that the participants experienced more positive than negative affect regularly. Although the majority of participants (73.9%) experienced a positive affective balance approximate affective balance, their affective balance was mild.

Prior laboratory research has found significant decreases in positive affect, measured with the SPANE P, during sustained sleep restriction (Riedy et al., 2013). Given the evidence that positive affect decreases as a consequence of sleep disruption, it is possible that the participants of this study also experienced a similar decrease in affect due to sleep disturbance. Positive affectivity in relation to sleep has been understudied even though it has been established that increased sleep quality is associated with increased positive affect (Thyssen, 2019). Nevertheless, previous research has demonstrated that sleep disruption has a mitigating impact on positive affect (Finan et al., 2017; Saksvik-Lehouillier et al., 2020). It is noteworthy that in conditions of sleep deprivation over consecutive days, which is characteristic of parental sleep when a child presents with sleep problems, even small deviations from an individual's average nightly sleep can cause noticeable declines in positive affect (Saksvik-Lehouillier et al., 2020). As such, it was interesting to note that, despite the impact of insufficient sleep, the participants still experienced high levels of positive affect.

Research has revealed that parenthood increases positive affect such as joy (Kohler & Mencarini, 2016; Musick et al., 2016). This increased positive affect results from, amongst others, experiences related to childhood development such as taking a first step and starting to talk (Nelson et al, 2014). Research has further found that parents experience more positive affect than non-parents and during time spent with their children than without their children (Nelson et al., 2013). Similar to life satisfaction, the inclusion of only partnered parents in the study appears to be important in that increases in parental positive affect occur only if the parental partnership is stable and healthy (Aassve et al., 2012). In addition to the influence of parenthood on positive affect, previous research has shown that most people tend to experience positive emotions frequently (Diener, Diener et al., 2018), which may explain the incidence of positive affect despite poor quality parental sleep.

In comparison to previous studies of asylum seekers (SPANE B = 3.29) and college students (SPANE B = 6.73), the affect balance in this sample was slightly higher (SPANE B = 7.16) (Howell & Buro, 2015; León-Pinilla et al., 2020), but lower than empty nest parents who underwent spiritual counselling (SPANE B = 17.02) (Pandya, 2021). Affect balance is important because it is associated with daily affective functioning, specifically in relation to the intensity and variability of affect experienced throughout the day (Veilleux et al., 2020). A lower affect balance is associated with more stress and daily or nightly stressors as well as less adaptive emotion regulation strategies. In addition, it is also associated with greater affective instability, with greater shifts in affect throughout the day (Veilleux et al., 2020). Therefore, mothers with lower affect balance are likely to experience more stress, more frequent fluctuations between negative and positive emotion, and when experiencing negative emotion, may employ less adaptive emotion regulation strategies. Overall, this study revealed that the participants experienced positive affect regularly and that their affective balance, while mild, was also positive.

**5.2.3.3. Couple Satisfaction.** The participants' mean score of the CSI-16 was 63.77 (SD = 11.85), which is slightly higher than the score obtained during the development and validation of the measure (M = 61) (Funk & Rogge, 2007) as well as a sample of Russian women (M = 59.87). The results from the present study revealed that the participants experienced moderate couple satisfaction, even though as indicated by the high standard deviation, there was large variation in scores. Despite the moderate mean score, only 16 participants (13.4%) reported dissatisfaction (scores under 51.5) in their romantic relationships prior to the sleep intervention.

Several factors contribute to differences in couple satisfaction, including genetics (Monin et al., 2019), spirituality and religion, communication, and sexual and interpersonal factors (Zaheri et al., 2016), all of which could explain the high deviation of scores. Furthermore, the reported moderate couple satisfaction was expected because the transition to parenthood often results in increased conflict and disagreements (Kluwer, 2010). Moreover, infant sleep problems are specifically associated with increased relationship stress (Hiscock & Fisher, 2015). This has been ascribed to lowered social cognition, reduced inhibition and decreased empathy of fatigued parents, which consequently leads to increased hostility and interpersonal conflict (Gordon & Chen, 2014).

However, the participants' relatively high mean score suggests that even if their children presented with sleep problems, they still experienced satisfying relationships. A possible explanation thereof is that individuals who have higher SWB are more likely to have children (Cetre et al., 2016). In this regard higher SWB is associated with higher couple satisfaction (Moore & Diener, 2019). Therefore, the participants in the present study were likely to have had higher baseline scores in SWB and thus couple satisfaction prior to commencement of the study. Furthermore, prior literature has revealed that stress elicits dyadic coping (stress management approaches within romantic partnerships), which is positively associated with relationship satisfaction (Rusu et al., 2020). Therefore, the stress experienced when children present with sleep problems could encourage couples to communicate and find more enhanced coping strategies and resources, which subsequently may counteract the effects of sleep deprivation on couple satisfaction.

#### 5.2.4. The Absence of Well-Being in Mothers of Children with Sleep Problems

The second aim of the present study was to investigate the absence of SWB among parents of children with sleep problems. Negative affect, postnatal depression and perceived stress were conceptualised as the absence of SWB among the participants in this study and accordingly, the SPANE N, EPDS and PSS-10, respectively were employed to measure such. The results for each measure are discussed in this section.

**5.2.4.1. Negative Affect.** The participants' mean score of the SPANE N was 15.37 (SD = 4.40), thus indicating that they experienced moderate negative affect prior to the implementation of the sleep intervention. In comparison to previous studies, although the participants' mean score of the SPANE N was similar to the original psychometric properties of the scale as measured with students (M = 15.36), it was higher than scores observed among German (M = 14.31) and Chinese samples (M = 14.37) (Diener et al., 2010; Li et al., 2013; Rahm et al., 2017).

While it is known that sleep problems in children with, for example, autism spectrum disorder increases negative affect in parents (Mihaila & Hartley, 2018), there is a dearth of literature on negative affect in parents of typically developing infants and young children with sleep problems. Therefore, a comparison of findings is not possible. Studies on parental sleep disruption as a result of infant or child sleep disturbances have tended to focus mainly on mood and anxiety (e.g., Chu & Richdale, 2009; Meltzer & Montgomery-Downs, 2011). However, literature has revealed that sleep problems in older children, specifically in middle childhood, have led to negative affectivity in mothers (Bell & Belsky, 2008). Hence, it is plausible to infer that the same is likely to occur in parents of younger children. Furthermore, there is a reciprocal relationship between maternal negative affect and child sleep problems in that children experience more sleep problems when their mothers experience more negative affect (Bell & Belsky, 2008).

There are numerous studies on sleep deprivation in other populations. While a few studies have found no increase in negative affect following sleep deprivation (e.g., Talbot et al., 2010), the incidence of negative affect among participants in the current study concurs with the findings of the majority of studies. For example, it has been established that restricted sleep increases negative affect (Gordon & Chen, 2014), especially anger (Krizan & Hisler, 2019). Moreover, this has been established for both clinical (Becker et al., 2020) and non-clinical populations (Minkel et al., 2012).

Literature has revealed that from a neurological perspective, sleep deprivation disrupts neural systems implicated in emotional control (Palagini et al., 2019), thus leading to increased negative affectivity. Furthermore, sleep deprivation interferes with the regulation of emotions, causing individuals to become more emotionally reactive and sensitive to stressful experiences (Almondes et al., 2021). It appears that while negative affect increases with sleep loss, it is also exacerbated by consecutive nights of disrupted sleep (Vandekerckhove & Wang, 2018). Parents who suffer sleep deprivation are therefore likely to experience more negative affectivity and are less able to regulate such negative affect. The latter tends to worsen as a consequence of the continuous disruption of sleep. Subsequently, parents may become more emotionally reactive to the daily stressors associated with child rearing such as temper tantrums, demands around bedtime and household chaos (Nomaguchi & Milkie, 2020). The current results support the notion that, regardless of causality, affect is adversely influenced by poor sleep.

**5.2.4.2. Perceived Stress.** The participants' mean score for the PSS-10 was 18.76 (SD = 7.48), thus indicating that they experienced moderate stress prior to the sleep intervention. While low stress was reported by less than a third of the participants (23.5%) and moderate stress by more than half of them (62.2%), a small number (12.6%) noted high stress prior to the sleep intervention. The participants' mean score is similar to those found in pregnant (M = 18.0) and postpartum (M = 18.3) Arabic women (Chaaya et al., 2010), but higher than those exhibited among a sample of business and accounting students (M = 16.90) (Smith et al., 2014). The literature has noted that there is concern among health professionals regarding stress and anxiety in both pregnant and postpartum women (Schetter & Tanner, 2012), which is supported by the mean perceived stress scores noted in this study. The participants' mean score suggests that the incidence of perceived stress in mothers of children with sleep problems also merits concern.

These results concur with previous research, which linked child sleep problems to increased stress in parents (Hall et al., 2017). In addition to the association of stress with parental responsibilities, fatigue and sleep disturbance are related to increases in parenting stress (Giallo et al., 2011; Hall et al., 2017; Wake et al., 2006) because it places more demands on fatigued parents. Similar to depression, the observed increase in stress could be due to the dysregulation of sleep-dependent physiological processes (Palagini et al., 2019). In this regard, parental sleep quality has been found to be a predictor of parenting stress (Martin et al., 2019; Meltzer & Mindell, 2007). Furthermore, parenting stress has also been directly associated with child bedtime resistance, child daytime sleepiness and child daytime behaviour problems (Byars et al., 2011; Martin et al., 2019). Burg et al. (2016) noted that stress and sleep have a bidirectional association, with increased stress having an adverse effect on sleep. This indicates that parents of children with sleep problems may experience decreased sleep quality as a direct result of child signalling or sleep disturbance as well as indirectly because of increased stress. It is of concern that stress has been associated with health indicators such as immune function and cardiovascular disease (Benham & Charak, 2019), which has detrimental consequences for parental and family well-being because parental health can affect overall family functioning (Pakenham & Cox, 2012).

**5.2.4.3. Postnatal Depression.** Finally, with regards to postnatal depression, the participants' mean score for the EPDS was 9.16 (SD = 4.49), thus indicating that they suffered mild depression. While less than one-quarter of the participants (23.5%) reported minimal or no depression, 13.4% noted severe depression. The participants' mean score was higher than that found among a large sample of postpartum women (M = 5.3) (Dørheim et al., 2009), which suggests that child sleep problems may contribute to maternal depression.

Research has shown that mothers of children with sleep problems are disproportionally affected by PND (Hiscock et al., 2008; Okun et al., 2018; Ystrom et al., 2017). Furthermore, studies have found a correlation between infant sleep problems and parental depression (Moore et al., 2012; Okun et al., 2018). This association is direct and reciprocal in that child sleep problems influence maternal depressive symptoms and *vice versa* even though the child-driven effects are considerably larger (Ystrom et al., 2017). Therefore, the results of the present study concur with previous research, which has linked child sleep problems to increased parental depression.

The relatively high levels of depression may be attributed to the dysregulation of several physiological systems, which are dependent on sleep, including disturbances in circadian rhythms and melatonin production (Pandi-Perumal et al., 2020). It is important to note that depression has an effect on health-related quality of life and SWB. Literature has shown that depression interferes with emotional well-being and positive affect (Engel et al., 2018). Furthermore, maternal depressive symptoms affect child sleep adversely (Toffol et al., 2019), which subsequently reciprocally and cyclically influences maternal depression. Furthermore, even subclinical levels of maternal depressive symptoms are implicated in the development of emotional problems in children (Pietikäinen et al., 2020) and are associated with life-long harmful effects on relationship quality (Myers & Johns, 2018). These findings emphasize the importance of identifying methods to reduce parental depression. Moreover, the reciprocal nature of depression and disturbed sleep suggests that behavioural sleep interventions may be a viable solution.

#### 5.2.5. Conclusion

It is evident that the mothers in this sample experienced high life satisfaction and high positive affect prior to the sleep intervention. They also experienced moderate couple satisfaction, moderate negative affect and a low positive affective balance. Furthermore, these mothers experienced mild symptoms of depression and moderate levels of stress. The presence of negative affect, depression and stress, together with moderate couple

satisfaction and a low positive affective balance, indicate that they experienced moderate overall well-being prior to the sleep intervention. While previous research has revealed that poor sleep quality is harmful to both children and parents (Martin et al., 2019; Sadeh et al., 2011), the results of this study found that it also has a negative effect on parental SWB.

# 5.3. Examining Changes in Levels of Well-Being After Sleep Intervention Implementation

The third and fourth aims of this study were to investigate whether the implementation of sleep interventions had an effect on parents' levels of well-being, specifically the presence as well as the absence thereof. The demographic information of this sample is outlined in the following section. In order to compare the mean scores after the intervention with those before the intervention, it is necessary to note the restricted sample of mothers that completed both Phases I and III. Only 77 participants completed both measures and accordingly, the analyses only included data of those participants.

# 5.3.1. Demographic Information of Participants after Completion of Sleep Intervention (Post – Test)

The demographic characteristics of the participants who participated in Phase III of the study, that is, post-intervention were similar to those of Phase I. The mothers that completed the follow-up questionnaires ranged between 24 and 44 years of age, with a mean age of 33.03 (SD = 3.92). The children in the sleep intervention ranged between three and 24 months, with a mean age of 9.38 months (SD = 5.24).

## 5.3.2. Significance of Differences in Well-Being After Implementation of Sleep Interventions

The third aim of this study was to examine the significance of differences in the presence of SWB, and the fourth aim investigated the significance of differences in symptoms of distress, that is, the absence of well-being of participants after the implementation of the sleep intervention. To determine whether changes in measures of well-being were statistically significant, inferential statistical analyses were performed. A comparison of the repeated measures sample means were therefore required and while the sample size was adequate, the paired-samples *t*-test assumes data are normally distributed. It was considered necessary to test the paired data for normality to determine whether parametric or non-parametric analyses were the most suitable approach. Normality was calculated using the Shapiro-Wilk test, which confirmed that data were normally distributed on all measures with the exception of the CSI-16 (p = <.001), thus indicating a need for non-parametric analysis on this measure. Paired samples *t*-tests were conducted to evaluate the

effect of the child sleep interventions on participants' SWB, with the confidence interval set at 95%. The Wilcoxon signed rank sum test for paired observations was conducted to evaluate the effect of the child sleep interventions on participants' scores on the CSI-16. The results for the complete data sets during Phase I and Phase III are summarised in Table 5.

## Table 5

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Measure		Pre-test	Post-test			-
	п	Mean (SD)	Mean ( <i>SD</i> )	p value	$\eta^2$	
SWLS	72	27.52 (5.13)	28.83 (5.04)	.006**	.10	-
SPANE P	70	22.70 (3.76)	24.24 (4.12)	.000***	.17	
SPANE N	70	15.09 (4.22)	12.46 (4.00)	.000***	.35	
SPANE B	70	7.61 (7.48)	11.80 (7.92)	.000***	.32	
CSI-16	64	62.80 (12.49)	63.94 (12.47)	.133		
EPDS	68	8.34 (4.48)	6.63 (4.18)	.000***	.17	
PSS-10	75	18.12 (7.89)	13.59 (6.79)	.000***	.34	

	Significance c	of Differences in	SWB Before	and After the	Sleep	Intervention
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*Note.* SWLS = Satisfaction with Life Scale; SPANE-P = Scale of Positive Experience; SPANE-N = Scale of Negative Experience; SPANE-B = Affective Balance; CSI-16 = Couple Satisfaction Index; EPDS = Edinburgh Postnatal Depression Scale; PSS = Perceived Stress Scale.

\*\**p* < .01. \*\*\**p* < .001.

**5.3.2.1. Changes in Life Satisfaction.** The results revealed that there was a statistically significant difference in SWLS mean scores before (M = 27.52; SD = 5.31) and after the sleep intervention (M = 28.82; SD = 5.04); t(71) = 2.81, p = .006. The effect size was medium ( $\eta^2 = .10$ ), which suggests moderate practical significance. These results suggest that the sleep intervention led to an increase in the participants' life satisfaction.

Satisfaction with life is a cognitive judgement of life as a whole and is based on a subjective assessment of an individual's circumstances (Diener et al., 1985; Diener, Oishi, et al., 2018). Life satisfaction remains relatively stable over time (Fujita & Diener, 2005), primarily due to stable personality traits and parental influences (Headey & Muffels, 2018). However, research has revealed that there is a discernible degree of variability in life satisfaction (Lucas & Donnellan, 2007). Headey and Muffels (2018) postulated that medium-and long-term changes in life satisfaction result from changes in behaviour, values and priorities. For example, while improved health and an increased frequency in exercise is associated with increased life satisfaction in the medium term, long-term decreases in life

satisfaction can result from repeated or long-term unemployment. Changes in marital status such as the death of a spouse and divorce can have a lengthy effect on life satisfaction trajectories (Lucas et al., 2003; van Scheppingen & Leopold, 2020). Furthermore, changes in satisfaction with family life are associated with changes in life satisfaction in the medium term (Headey & Muffels, 2018). The results of the present study support this notion as life satisfaction increased once sleep problems were resolved and satisfaction with family life presumably improved.

After the intervention, it appeared that these participants' evaluative judgements of their circumstances had improved, possibly because several facets of their life had changed. For example, child sleep problems have been associated with parental fatigue (Giallo et al., 2011), impairments in cognitive functioning (Hiscock & Fisher, 2015) and have an adverse effect on mood and affect (Hall et al., 2017). These facets may change after a successful child sleep intervention. Any changes in parental sleep are of particular importance as evidence of an association between insufficient sleep and decreased life satisfaction has been demonstrated (Zhi et al., 2016). Research has also shown that the highest life satisfaction scores are associated with approximately eight hours of sleep (Piper, 2016).

Although the interaction between sleep and life satisfaction has been explored amongst children (e.g., Blackwell et al., 2020), adolescents (e.g., Matos et al., 2017) and young adults (e.g., Samaranayake et al., 2014), a paucity of research has examined the influence of sleep on parents' life satisfaction. Accordingly, the finding in the current study that participants' life satisfaction increased significantly after the sleep intervention, with more than half of them reporting very high levels of life satisfaction after the intervention, is important. Improved child sleep is associated with enhanced parental sleep quality (Hall et al., 2017). It is therefore possible to infer that maternal sleep improved as a result of the child's improved sleep and in turn, the increased sleep duration and quality enhanced life satisfaction. It is also possible that reductions in stress and mood led to increased overall life satisfaction. It is important to note that although there was a statistically significant change in life satisfaction scores, they were classified the same, that is, highly satisfied. Although the effect size was moderate and more research is required, this result provides preliminary evidence that sleep intervention implementation could improve the life satisfaction of parents of children with sleep problems. **5.3.2.2. Changes in Affect.** With regard to changes in affect, the analysis on the SPANE P revealed that the participants related an increase in positive affect after the sleep intervention. Furthermore, there was a significant difference in scores before (M = 22.70; SD = 3.76) and after the intervention (M = 24.24; SD = 4.12); t(69) = 3.78, p < .001. The effect size was large ( $\eta^2 = 0.17$ ), which suggests practical significance. The majority of participants (82.9%) noted moderate to high positive affect after the intervention.

Only a few studies have examined the effect of sleep interventions on parental affect. In earlier studies, the focus has primarily been on negative affect such as anger and anxiety (e.g., Hall et al., 2017; Price et al., 2012; Symon et al., 2012) and to the best of the researcher's knowledge, positive affect has been included in only one study (Symon & Crichton, 2017). The current study's finding of increased positive affect is in accordance with Symon and Crichton's (2017) finding that positive affect increased significantly for parents after a sleep intervention. While Simon and Crichton (2017) employed a single item scale to measure positive affect (pleasure), the findings of the present study have expanded on their research by including specific emotions such as joy and contentment as well as general feelings, for example, feeling good, positive and happy. It consequently extends the understanding of how sleep interventions influence maternal SWB, specifically in relation to enhanced positive affect.

Further analysis on the SPANE N indicated that the participants reported a decrease in negative affect after the sleep intervention, with a significant difference in scores before (M= 15.09; SD = 4.22) and after the intervention (M = 12.46; SD = 4.00); t(69) = 6.14, p < .001. The effect size was large ( $\eta^2 = 0.35$ ), again suggesting practical significance. The majority of participants (92.9%) related moderate to low negative affect after the intervention. The finding that their affect balance improved significantly after the sleep intervention is also important. There was a significant difference in scores before (M = 7.61; SD = 7.48) and after the intervention (M = 11.80; SD = 7.92); t(69) = 5.68, p < .001, with the eta squared statistic again indicating a large effect size ( $\eta^2 = .32$ ).

Research has revealed that negative affect improves after sleep interventions, with anger and anxiety decreasing significantly for parents (Hall et al., 2015; Hall et al., 2017; Symon et al., 2012; Symon & Crichton, 2017), which concurs with the current findings. Similar to positive affect, the findings of the present study expand on prior literature with the inclusion of specific emotions, including sadness and fear as well as general feelings such as feeling negative, bad and unpleasant. Even though there is a scarcity of studies on the influence of sleep interventions on the affective balance of parents, this result is not surprising given the improvements reflected on the SPANE subscales. These findings revealed that the implementation of a sleep intervention improved the participants' overall positive affective balance.

The observed improvement in affect may be explained partly by the enhanced sleep of mothers since while good quality sleep is a predictor of positive affect, poor quality sleep is a predictor of negative affect (Sonnentag et al., 2008; Vandekerckhove & Wang, 2017). As a consequence of improved child sleep after a successful intervention, parental sleep is likely to improve as well. One night of sleep recovery restores, at least partially, the metabolic deficits caused by sleep deprivation in the brain structures implicated in emotion regulation (Wu et al., 2006). There appears to be continued improvements with sustained sleep recovery as amygdala activity, which increases with sleep deprivation, is significantly reduced after nine nights (Motomura et al., 2017). Literature has revealed that subsequent to sleep deprivation negative affect can return to baseline after only one night of sleep recovery, yet there is a delayed returned to baseline for positive affect, with little change observed within three days of sleep recovery (Kim, 2018). Similarly, Motomura et al. (2017) found decreases in negative affect, with significant lower scores after nine nights, in comparison to one night of sleep recovery. The current findings support the observation of improved negative affect and extend the findings of delayed recovery of positive affect. Notably, while Kim (2018) observed participants over the course of three days, a follow-up at approximately two months was incorporated in the present study. The extended observation may explain the difference in the findings related to positive affect. In addition, the slower recovery of positive affect may be attributed to the higher degree of impact that sleep deprivation has on positive as opposed to negative affect. Previous studies have found that positive affect is more severely influenced by sleep deprivation than negative affect (Alfano et al., 2020; Reddy et al., 2017). Therefore, it is reasonable to infer that the increased degree of impact on positive affect necessitates a longer recovery. However, the results from the present study suggest that improvement in positive affect is possible if given enough recovery time.

Another potential explanation for the improved affect observed in the participants is that improvements in other facets of well-being such as stress, depression and life satisfaction exerted a secondary influence on maternal affect after the sleep intervention. Improvements in stress levels have been associated with reductions in negative affect and increased positive affect (Cavanagh et al., 2021). Similarly, while depression has an inverse association with positive affect and is related to increased negative affect (Varma, 2017), life satisfaction is linked to positive affect and has an inverse association with negative affect (Extremera & Rey, 2016). Therefore, enhancements in stress, depression and life satisfaction that resulted from the intervention may explain the improved affect observed in the present sample. It is important to note that an improved routine such as that associated with sleep interventions could reduce household chaos, which, in turn, is associated with parental emotional responses (Marsh et al., 2020). Thus, the enhanced parental sleep that was a direct result of improved child sleep as well as the secondary outcomes associated with sleep interventions may have contributed to improved parental affect. Finally, as the effect size was large on all measures, it is reasonable to infer that sleep interventions assist in supporting improved affect and thus, well-being in mothers of children with sleep problems.

**5.3.2.3. Changes in Couple Satisfaction.** Non-parametric statistical analysis was required for the CSI-16. The descriptive statistics incorporating the median are presented in Table 6.

## Table 6

Decemptive etablice for eer retriedenting the median				
Measure	Percentiles			
	25 <sup>th</sup>	50 <sup>th</sup> ( <i>Md</i> )	75 <sup>th</sup>	
CSI-16 Pre-test	56.25	66.50	72.00	
CSI-16 Post-test	58.50	67.00	73.00	

Descriptive Statistics for CSI-16 Presenting the Median

As shown in Table 6, there was a slight increase in median scores in the post-test on the CSI-16, thus suggesting a trend towards improvement. Nonetheless, the analysis revealed that there was no statistically significant difference in couple satisfaction, as related by the participants, after the sleep intervention (z = -1.501, p = .133). During Phase I (pretest), they had reported moderate couple satisfaction prior to the sleep intervention.

Previous studies that have evaluated sleep interventions have revealed inconsistent results related to whether couple satisfaction improves. In reviewing the literature, few studies have investigated the association between sleep interventions and couple satisfaction. Although a review conducted by Mindell et al. (2006) included three studies that demonstrated improvement in couple satisfaction after sleep interventions, Smart and Hiscock (2007) found no change after such an intervention. The present study revealed that even though there was a trend towards improved couple satisfaction, the results were not statistically significant. A possible explanation thereof is that while the resolution of child

sleep problems should improve parental sleep and consequently, social cognition, inhibition and empathy, the conflicts related to parenthood are not necessarily affected only by child sleep. Kluwer and Johnson (2007) noted that parenthood results in radical changes in the relationship, including reduced time for joint activities, changes in established patterns of communication and intimacy, and declines in sexual quality. It is likely that these changes will persist beyond improved child sleep. Furthermore, factors unrelated to children such as differentiation of self, religion and moral intelligence may have an effect on couple satisfaction outside of the context of child sleep (Ferreira et al., 2014; Homaei, 2019). Finally, there was a high incidence of positive affect and life satisfaction among the participants of this study prior to the intervention, and higher SWB is associated with higher couple satisfaction (Moore & Diener, 2019). This is possibly as a result of higher relationship maintenance behaviour, perceived responsiveness and accommodation within the relationship, which is associated with more stable couple satisfaction trajectories (Ter Kuile et al., 2021). When considered together, this could further explain the lack of significant difference in scores after the intervention.

**5.3.2.4. Changes in Perceived Stress.** There was a statistically significant change in PSS-10 scores before (M = 18.12; SD = 7.89) and after the sleep intervention (M = 13.59; SD = 6.79); t(74) = 6.18, p < .001., with a large effect size ( $\eta^2 = .34$ ), thus suggesting practical significance. These findings revealed that the sleep intervention reduced the participants' levels of stress.

Research has shown that parental stress improves after the implementation of sleep interventions. A review by Field (2017) confirmed stress decreases after an intervention. Furthermore, the American Academy of Sleep Medicine (AASM) has recommended sleep interventions for improving parenting stress (Morgenthaler et al., 2006). However, research has revealed that up to half of parents who implemented sleep interventions did not experience any improvements in stress (Matthey & Črnčec, 2012). Furthermore, Blunden and Baills (2013) found that GE, specifically, is too stressful for parents, thus potentially increasing stress (Blunden & Baills, 2013). Conversely, the present study found that stress improved significantly after the implementation of a sleep intervention that included both GE and EwPP. Therefore, the results concur with previous research that has linked sleep interventions to improved stress.

A potential explanation for the improvement in perceived stress may be situated in the physiological changes associated with enhanced parental sleep. Increased child sleep after a sleep intervention is associated with improved parental sleep (Hall et al., 2017). Pejovic et al. (2013) noted that sleep recovery after deprivation decreases the stress hormone cortisol, which could consequently lead to lowered perceived stress, as demonstrated in the results of the present study. In addition, a secondary outcome of sleep interventions includes children's improved daytime behaviour, for example, enhanced alertness, mood, appetite and security in various situations (Eckerberg, 2004; Hiscock et al., 2015). Mindell et al. (2015) also posited that consistent routines related to naps and bedtime that are incorporated during sleep interventions are beneficial in the reduction of bedtime stress and physiological arousal. It is plausible that these outcomes may have contributed to improved parental stress scores. Therefore, these findings support the AASM's recommendation for sleep interventions to improve stress in parents of children with sleep problems (Morgenthaler et al., 2006).

**5.3.2.5. Changes in Symptoms of Depression.** The results revealed that there was a statistically significant difference in EPDS scores before (M = 8.34; SD = 4.48) and after the intervention (M = 6.63; SD = 4.18); t(67) = 3.70, p < .001, with a large effect size ( $\eta^2 = .17$ ). These results indicated that the participants' symptoms of depression decreased after the sleep intervention. Research has shown that depression decreases significantly after the implementation of a sleep intervention (Hall et al., 2017; Smart & Hiscock, 2007; Symon & Crichton, 2017). Therefore, the findings of the present study concur with previous research.

While much is known about the impact of sleep interventions on maternal mood, the findings of the present study provide support for the premise that GE and EwPP sleep interventions are useful strategies to improve maternal mood in mothers of children with sleep problems. Previous studies that have employed GE or EwPP have consistently found significant decreases in maternal depression (e.g., Hall et al., 2017; Hiscock et al., 2007; Matthey & Črnčec, 2012) and parental endorsement (Hiscock et al., 2008; Matthey & Črnčec, 2012). Although these improvements were maintained for an extended period of time, Mindell et al. (2006) cautioned against the interpretation of durability because the follow-up in the majority of the studies was less than six months.

The participants' depression may have decreased because parental sleep is known to improve as child sleep improves. Physiologically, disrupted neural activity as a result of inadequate sleep normalises after sleep recovery (Motomura et al., 2017) because of improvements in both fatigue and sleep quality, thereby improving mood. Another possible explanation involves limit setting at bedtime, which has been found to contribute to the variance in depression scores in parents (Hall et al., 2017). Sleep interventions encompass establishing appropriate sleep behaviours and enable parents to set bedtime limits for their children. The secondary outcome of limit setting appears to be a reduction in depression scores. Finally, an increase in positive affect and a decrease in negative affect have been implicated in depression outcomes (Dunn, 2012; Varma, 2017). Therefore, the reduced depression could be attributed to the improved affect, which the participants experienced. In this regard, improved affect may be attributed directly to restored neural activity in brain structures that are implicated in emotion regulation after sleep recovery (Motomura et al., 2017).

It is also important to note that as the period of six to eight weeks passed between measurements, the depression scores may have decreased as a result of maturation. However, research has revealed that symptoms of PND continue or may even be exacerbated during the postpartum period (Brummelte & Galea, 2016). Rouzafzoon et al. (2021) by employing a randomised control trial found that while the EPDS scores of a control group did not decrease significantly eight weeks after a sleep intervention, the scores of the intervention group decreased significantly during the same period. This indicates that variance in depression scores was due to the sleep intervention and not as a result of maturation. As the present study utilised a similar timeframe, one may conclude that the decrease in depression was likely the result of the sleep intervention.

## 5.3.3. Concluding Summary: Quantitative Study

Prior to the intervention, the mothers in this sample experienced high life satisfaction and high positive affect, moderate couple satisfaction, moderate negative affect, mild symptoms of depression and moderate levels of stress. The results revealed that mothers who implemented sleep interventions to assist with their child's sleep problems experienced significant improvements in satisfaction with life, affect, postnatal depression and perceived stress. There was slight, but not significant, improvement in couple satisfaction. Despite this finding, one can argue that sleep interventions improve maternal well-being as there was an overall reduction of negative affect (SPANE N) and experiences (EPDS and PSS-10) and an increase in positive affect (SPANE P and SPANE B) and life satisfaction (SWLS). To acquire a richer understanding of these enhancements in well-being, the qualitative results are subsequently discussed.

## 5.4. Parents' Experiences of Well-Being in the Context of Sleep Interventions

The qualitative phase of the study enabled a richer understanding of the subjective experiences of parents who implement sleep interventions. The purpose thereof was to shed light on how the sleep interventions were experienced and influenced parental well-being. Accordingly, a detailed presentation of the qualitative findings is provided in this section. The

discussion centres on parental perceptions of SWB before the implementation of the sleep intervention and their experiences during and after the implementation. The findings are discussed in chronological order to highlight how child sleep interventions affected parents' experiences of well-being. To acquire a holistic understanding of potential changes to parental well-being, interviews were conducted with the fathers and mothers. The fathers were selected based on their willingness to participate. Further, mothers whose well-being was lowest during Phase I, whose well-being was classified in the mid-range, whose wellbeing was highest during Phase I and whose well-being did not change significantly between the two phases were selected for the interviews. This selection ensured a more balanced reflection of parental experiences of sleep interventions and the consequent effect on their well-being. Interviews were conducted with 11 parents. Each interviewee's information is presented in Table 7. To ensure confidentiality and decrease the possibility of identifying information, their child's age and number of children in the household are not displayed in the table. In addition, as only two fathers participated in the interviews their ages are not displayed.

#### Table 7

Participant	Gender	Age	Level of well-being
P1	Female	34	High
P2	Female	30	Low
P3	Female	32	Mid-range
P4	Female	32	Mid-range, No change
P5	Female	31	High
P6	Female	30	Mid-range
P7	Female	36	Mid-range, No change
P8	Female	31	Low
P9	Female	33	Mid-range
P10	Male		
P11	Male		

Description of Interview Participants

While the participants in the quantitative phase were from several countries, all those interviewed were South African citizens. Four of the parents that participated in the interviews had twins in the sleep intervention. The inclusion of these parents was deemed beneficial so as to acquire a more nuanced perspective of the effect of sleep interventions on parental well-being.

## 5.4.1. Description of Thematic Framework

In order to address the second research question of the study, the thematic analysis focused on acquiring an understanding of the experiences of parents who implemented sleep interventions. Codes were included if it related to any pertinent experience during the sleep intervention or the parents' well-being in any form. These codes were grouped into themes and subthemes where relevant. The themes are reflected in Table 8.

## Table 8

	Themes	Sub-themes
Theme 1	Poor sleep has an extensive	Increased fatigue
	effect on parental well-being	Decreased social contact
		Negative effect on well-being
Theme 2	General challenges to well-being	Lack of partner support
		Routine during sleep intervention
		Differences in child temperament
		Routine after sleep intervention
Theme 3	Need for information and support	Need for more information
		Need for support
Theme 4	The experience of the sleep	Beliefs regarding sleep intervention
	intervention	Negative experiences during sleep
		intervention
		Positive experiences during sleep intervention
		Satisfaction with results
Theme 5	Concerns regarding potential	Fears regarding how child experiences the
	negative consequences of	intervention
	implementing a sleep	Fears regarding potential long-term harm
	intervention	
Theme 6	Protective factors of parental	Support from sleep consultant
	well-being during sleep	Partner support
	intervention	
Theme 7	The intervention contributed to	Improved routine enhanced well-being
	improved well-being	Improved sleep enhanced well-being
		Increased confidence in parenting enhanced
		well-being

Main Themes and Subthemes Related to Parental Well-being in the Context of Sleep Interventions Upon completion of the analysis, it became evident that the themes and subthemes could be classified into three separate timeframes. The participants reflected on their experiences of well-being before the sleep intervention, during the sleep intervention and after the sleep intervention. Accordingly, the thematic framework adopted the same structure. The participants' responses regarding changes to well-being as a result of improved routines and improved sleep (Theme 7), the sleep intervention (Theme 4) and facets that helped or hindered well-being during the implementation of the interventions (Themes 2, 3 and 6) were generated primarily from the interview questions and thus, analysed deductively. In contrast, discussions related to concerns about consequences (Theme 5), effects of poor sleep (Theme 1) and increased confidence in parenting (Theme 7) were generated by the participants and emerged as a result of inductive analysis. Some of the themes were classified in more than one timeframe, as depicted in Table 9. For discussion purposes, these are not necessarily presented in chronological order. The seven themes are subsequently discussed in detail as per the thematic framework.

## Table 9

Timeframe 1: Before the	Timeframe 2: During the	Timeframe 3: After the
intervention	intervention	intervention
Theme 1	Theme 2	Theme 7
Theme 2	Theme 3	
Theme 3	Theme 4	
	Theme 5	
	Theme 6	

#### Themes Classified in Each Timeframe

#### 5.4.2. Timeframe 1: Experiences Before the Sleep Intervention

The participants' experiences of well-being before the sleep intervention were influenced primarily by a lack of adequate sleep, which then affected several facets of their lives. They also experienced specific challenges in their parental partnership, which influenced well-being. The need expressed by some of the participants for more information on the intervention and what they could expect from it was also classified in this timeframe. The thematic framework for Timeframe 1 is portrayed in Figure 2.

## Figure 2



Timeframe 1 – Themes and Subthemes Before the Sleep Intervention

**5.4.2.1. Theme 1: Poor Sleep has an Extensive Effect on Parental Well-Being.** This theme is related to how parental well-being was directly and indirectly affected because of inadequate sleep that resulted from child sleep problems. Three subthemes emerged, namely, fatigue, social contact and well-being.

Many participants experienced *fatigue* and related how poorly their child slept before the intervention and the exhaustion they experienced as a result. The influence on their wellbeing was pervasive. This is exemplified in Participant 6's comment: "We were pretty desperate because it was also, it was really taking strain on our marriage, on our family, on my moods, my everything." Some of the participants found it difficult to be woken up twice. Participant 10, a father who was explaining his wife's experience, related, "So, when you're the mom and you're breastfeeding, and you're the one having the wake up and feed, and your kid's now doing it twice instead of once, like, that's tough." Other participants struggled with more wakings per night. Participant 2 explained, "We were up until 10 o' clock, 9 o' clock, then he would eventually sleep through. I mean, when I say through, I mean four hours. And then he would be awake every hour."

While discussing the experiences of well-being before the sleep intervention, some of the participants spoke specifically about the effect exhaustion had on their daily lives and functioning. Participant 3 admitted, "We were so tired we couldn't focus" and Participant 4 shared, "I was so tired the next day and I do work from home so it's difficult for me also to be with them the whole day and to get some work done when I'm very tired." These extracts illustrate that exhaustion appeared to have a direct effect on the participants' daily functioning and more importantly, on their ability to cope with the demands of family life and maintain a work-life balance. This is to be expected if one considers the evidence on the influence that poor sleep can have on functional efficiency and childcare (Giallo et al., 2011; Hiscock & Fisher, 2015). Giallo et al. (2011) noted that fatigue influences parenting negatively, with parents reporting that it interferes with the type of parent they want to be. In this regard, fatigued mothers seem to fear that they are not good enough and thus, place additional pressure on themselves, which, if unchecked, may eventually lead to feelings of self-hate, shame and loneliness (Hubert & Aujoulat, 2018). In addition, increased irritability and parental hostility towards a child with sleep problems and decreased parenting efficacy and satisfaction have been noted in the literature (e.g., Giallo et al., 2013a; Hiscock & Fisher, 2015). This has been revealed in parents of children with sleep problems (Giallo et al., 2011), neurological conditions (Giallo et al., 2013b) and typically developing children (Hubert & Aujoulat, 2018).

It is noteworthy that despite mothers being more actively involved in childcare at night (Venn et al., 2008), fathers also experience fatigue and sleep disturbances if their child has sleep problems (Hall et al., 2017). While the majority of studies have focused exclusively on maternal exhaustion and daytime functioning (e.g., Giallo et al., 2011; Hubert & Aujoulat, 2018; Mindell et al., 2015), the present study revealed the subjective influence this has on both mothers and fathers' ability to cope with the responsibilities of parenting. These findings concur with those of Giallo et al. (2013a) where mothers and fathers described an unremitting tiredness that influenced their well-being, parenting and relationship with their children. This is compounded by the impact of poor sleep on child behaviour (Hall et al., 2011; Hysing et al., 2016). In this regard, children with sleep problems have a higher incidence of social-emotional problems, for example, problems with attention, hyperactivity, aggressive behaviour, mood problems and anxiety (Reynaud et al., 2018; Turnbull et al., 2013). In addition to supporting the large body of literature on maternal experiences, this finding also contributes to the nascent literature on paternal experiences of child sleep problems.

Poor sleep not only influenced daily functioning and energy levels, but also influenced the *parents' social contact*, an important contributor to SWB (Sandstrom & Dunn, 2014). As revealed by Participant 6's remark, fatigue led to decreased social activity:

"It really affected me socially because I could never enjoy my, um, evening, or I had no desire to even want to do anything social in the evenings because all I could think about was dreading the whole night because I knew that I wasn't going to get any sleep and that I was just going to be miserable in the morning."

Social contact is an important facet of SWB (Sandstrom & Dunn, 2014) and as such, the finding revealed in this study of reduced social activity in parents of children with sleep problems is concerning. This is in line with previous research that has highlighted the influence of parental fatigue on maternal loneliness (Hubert & Aujoulat, 2018) as well as its impact on relationships with others (Giallo et al., 2013a). Furthermore, lack of social contact appears to be associated with increased night-wakings (Tighe et al., 2016), thereby intensifying the poor sleep of such parents. As increased social activity and improved sleep promotes well-being (Chow, 2020; Huxhold et al., 2014), behavioural sleep interventions, which have been shown to improve adult sleep (Hall et al., 2006), are a potential strategy to enhance social activity and the overall well-being of sleep deprived parents.

The participants' responses clearly indicated that *poor sleep influenced their subjective well-being* broadly. Most of the participants spoke about how poor sleep influenced all facets of their well-being as well as that of their child. While child well-being was not the focus of this study, it is noted in this section because it appears to affect parental well-being reciprocally, as demonstrated when Participant 10 stated:

"You know as a parent, if your kid is not sleeping then they're unhappy which, you know, like, not only you as a parent losing sleep but like, a sleepy child who doesn't want to sleep is the worst... So I mean, ja, you know again, it's that kind of knock-on effect in terms of the sleep piece is definitely a huge part of it but it just significantly shifts people's ability to manage emotion, and, and just your interactions with each other."

It appears that poor sleep had a negative effect on emotional experiences, that is, affect and romantic relationships, namely, couple satisfaction. The participants referred to experiencing increased negative emotional experiences overall and specifically, with regards to their children and partners. Emotions such as anger, resentment and irritation were quite

common. When discussing her husband's negative emotions towards their children, Participant 4 asserted, "His whole manner and tone was very aggressive towards her because she wasn't sleeping, she wasn't going down for a nap." Participant 6 expressed her negative emotions towards her husband as follows: "I used to feel extremely resentful because he would get sleep but I wouldn't." This finding concurs with extant literature, which has revealed that parental fatigue as a result of child sleep problems is associated with irritability and hostility towards their children (Cook et al., 2017; Giallo et al., 2011; Hiscock & Fisher, 2015). Furthermore, inadequate sleep is associated with increased conflict between partners (Gordon & Chen, 2014). While inadequate sleep increases negative emotions more generally (Krizan & Hisler, 2019; Minkell et al., 2012), the resentment, anger and irritation specifically directed at partners and children appear to be due to a perceived imbalance of parental responsibilities and associated consequences, as well as loss of control, that is, the inability to put their child to sleep.

In addition to the presence of negative affect towards their partners, the lack of adequate sleep appeared to have a negative influence on couple satisfaction as a whole. Participant 6 related, "I wasn't getting much sleep so I was extremely angry, I was very moody in the mornings, and it was affecting my relationship with my husband." This was evident for parents of singletons as well as those of twins. Participant 3 explained:

"I think because the two of us were just so tired and just had no energy after dealing with the two of them and stuff, like, we just slipped into such bad habits, um, we would you know just not cook, and not spend time together and we were always snapping at each other and always irritated with each other."

Furthermore, because of poor sleep, parents often did not share a bed as revealed by Participant 1:

"So my husband never slept in our bed at all. He went to sleep with my little boy in his room, because she literally all night long wants to be in my, she was lying on my upper arm and sleeping like that."

These findings are consistent with prior research that found that parents of children with sleep problems experience higher levels of relationship dissatisfaction (Meijer & van den Wittenboer, 2007; Peltz et al., 2016). The negative influence that child sleep problems have on romantic relationships may be multifaceted. Potential facets include changes to established patterns of behaviour and intimacy such as loss of joint activities, loss of shared

leisure time and sleeping in separate beds, changes to how a partner is perceived as a result of emotional and behavioural changes elicited by fatigue, and increased parental stress resulting from parenting in general (Nomaguchi & Milkie, 2020) as well as child sleep problems specifically (Hall et al., 2017).

Several participants also experienced negative affect related to the uncertainty of what nights would bring and their ability to cope throughout the day. With regard to bedtime, Participant 8 shared, "Before the sleep intervention I used to dread bedtime because I just knew that now I'm going to be up for the whole night and I would pray she wouldn't wake up." Theories of uncertainty and affect have posited that being unable to predict an outcome is disconcerting and causes negative affect or emotions (Anderson et al., 2019). For example, the Uncertainty and Anticipation Model of Anxiety (UAMA) proposes that anxiety is related to expectations about the probability and consequences of future threats (Anderson et al., 2019). In essence, the UAMA suggests that unexpected disruptive experiences (such as random night-wakings) increase attention to potential threats (specifically potential nightwakings), thus causing hypervigilance (in the expectation of waiting for signals from the child), and eventually heightened emotional reactivity to uncertainty. The uncertainty of whether a child will sleep through the night or how many night-wakings will occur may cause the parents to experience anxiety and negative emotions. A further potential explanation for the negative emotions experienced by parents is that the absence of predictability and structure in daily activities, as a facet of household chaos, has been associated with higher levels of depression (Marsh et al., 2020) of which negative affect is a key component.

Participant 1 admitted, "I dreaded every day but more due to the fact that I dreaded the constant screaming [from her tired daughter]." The latter comment demonstrates how a lack of sleep resulted in decreased child well-being, which, in turn, led to the participant suffering negative emotional experiences. Inadequate child sleep is associated with heightened emotional and mood problems in children (Reynaud et al., 2018). Therefore, the crying behaviour that Participant 1 shared is not outside the norm for a child with sleep problems. Although there is a dearth of literature on the influence of child well-being on parents, Nomaguchi and Milkie (2020) noted that parental strain increases as demands on childcare increase. The need to manage and cope with emotional and behavioural difficulties from a tired child conceivably puts strain on an already fatigued parent. In this regard, prior literature has confirmed that caring for children with emotional or behavioural problems increases parental strain (Vaughan et al., 2013).

Finally, several participants related that they experienced increased stress, lowered mood and decreased life satisfaction due to not being able to sleep. Participant 2 admitted, "It's an underlying stress like, am I going to get through this day? Am I going to make another mistake at home, or at work?" This finding is in line with previous research in that fatigue and sleep disturbance have been associated with increases in parental stress (Giallo et al., 2011; Hall et al., 2017; Wake et al., 2006). The ability to function effectively may also be compromised as a result of inadequate parental sleep (Hiscock & Fisher, 2015; Smith et al., 2019). It is evident from Participant 2's comment that she had concerns about her functional efficiency in the home as well as at work before the sleep intervention, which caused her distress. Her fear of making mistakes was concerning and valid as cognitive facets such as decision accuracy, psychomotor vigilance, inhibitory control and self-monitoring declines after poor sleep (Aidman et al., 2019). This can have far reaching consequences for child and personal safety.

When discussing her mood, Participant 3 shared that she felt: "...quite depressed, always sad, um, I would cry a lot in the shower alone and was just overwhelmed by everything." The influence that poor sleep had on Participant 3's mood is consistent with prior research, which has established that mood is severely affected by insufficient sleep (Giallo et al., 2011; Pemberton & Tyszkiewicz, 2016; Schwarz et al., 2019), specifically for parents of children with sleep problems (Hall et al., 2017; Hiscock & Fisher, 2015). While talking about his life satisfaction before the intervention, Participant 11 explained, "When you have a child that is not sleeping through you feel as if you have a cup that is consistently empty." This does not concur with extant literature on parental life satisfaction, possibly because life satisfaction is influenced by several domains apart from parenting. Literature on life satisfaction of parents with children who present with sleep problems appears to be absent. However, based on the responses from the participants, it appears that child sleep problems have a subjective influence on parental life satisfaction. This is not surprising, given that poor sleep is detrimental to life satisfaction in and of itself (Blackwell et al., 2020; Zhi et al., 2016). In addition, child behavioural and emotional problems, a consequence of poor child sleep (Reynaud et al., 2018), are associated with increased parental stress (Vaughan et al., 2013), where stress is known to have an influence on life satisfaction (Extremera, 2009; Kuang-Tsan & Fu-Yuan, 2017).

It is evident that, as a result of their children's sleep problems, these parents experienced more exhaustion, had less social contact and in general, their well-being was lower prior to the intervention. There is a scarcity of research on the effect of child sleep problems on parental SWB. Nevertheless, the findings of the present study concur with those of Tsai et al. (2014) who found that poor infant sleep resulted in exhaustion, stress and negative emotions in mothers. Similarly, Smith et al. (2019) revealed that mothers of preschool-aged children reported negative emotions and decreased daytime functioning as a result of child sleep problems. Although only mothers were included in these studies, the results are in accordance with those of the present study and thus, suggest that parental experiences of child sleep problems are similar. However, it is important to exercise caution in the interpretation of the results because there was only a small sample of fathers, specifically two, in the present study. No literature could be found that examined life satisfaction in parents of children with sleep problems. Therefore, the current findings, while preliminary, extend the existing body of knowledge vis-à-vis the SWB of parents with child sleep problems.

**5.4.2.2. Theme 2: General Challenges to Well-Being.** The discussion, thus far, has centred on parental experiences regarding sleep prior to the intervention. In addition, the parents also experienced specific challenges that had a direct effect on their well-being. Challenges were defined as any factor that might impede or otherwise negatively influence the well-being of parents. Prior to the intervention, the only identified challenge was *a lack of partner support*. Decreases in well-being appeared to be compounded in participants who did not receive support from their partners prior to the intervention, specifically in relation to experiencing increased negative emotions and decreased couple satisfaction. Participants who did not receive support from their partners often needed to maintain emotional control, carried the burden of responsibility and consequently, experienced negative feeling towards their partners. Participant 2 asserted:

"I was angry at him for, I, I kind of blamed him for what I went through... He worked throughout my maternity leave, throughout lockdown, so I was basically at home with two screaming children, and ja, I just didn't feel like I got a lot of sympathy from him. So I was very angry with him."

In particular, several mothers related a lack of partner support during the bedtime routine. Participant 1 shared, "I'm the only one who's been feeding her, who's put her to bed, who's going to comfort her when she's awake." Participant 3 related, "I am the one that is always doing both, you know all their feeding, all the sleep time, bathing together. Like, that's always on me." This concurs with Venn et al. (2008) who revealed that fathers reported less active involvement at night, specifically in relation to physical caring activities such as feeding. However, in the present study, one father also noted a lack of partner support as a

specific source of concern. Participant 11 stated, "I did everything from bath-time to suppositories."

Parents with fatigue require support from their partners. Furthermore, a lack of partner support increases parental stress (Sepa et al., 2004; Stapleton et al., 2012). Partner support encompasses physical support with household and child-rearing duties as well as emotional support. The literature has revealed that mothers feel supported by their partner when the father, amongst others, communicates empathically, offers praise, demonstrates reliability and a willingness to help, and contributes fairly to household duties (Kirova & Snell, 2019). Parental experiences of child sleep problems have mainly been examined from maternal perspectives (Sviggum et al., 2018). In addition, research on partner support during the transition to parenthood has explored support from father to mother (e.g., Twamley et al., 2013). There does not appear to be any literature on the support needs of fathers of children with sleep problems. Both mothers and fathers require partner support during the postnatal period (Gillis et al., 2019), and parents of children with sleep problems are no exception. Although the limited literature has focused on the maternal experience (Guendelman et al., 2001; Kirova & Snell, 2019), findings from the present study indicate that fathers also valued and required partner support when their child has a sleep problem. However, not all the participants experienced a lack of partner support. Those who related high relationship satisfaction despite inadequate sleep also noted teamwork, fair division of duties and acknowledgement of their partners' efforts were important contributing factors.

**5.4.2.3. Theme 3: Need for Information and Support.** The final theme relevant to the timeframe prior to starting the sleep implementation is a need for more information and support. As with Theme 2, Theme 3 was also present across multiple timeframes, specifically before and during the intervention. This theme is defined as parental needs with regard to more information or support that was required before or during the intervention.

Several participants noted a *need for more information* prior to commencing the sleep intervention to ensure they were prepared properly for what to expect during the intervention process. These needs related specifically to the amount of crying involved and the expected parental emotional experiences. Some participants expected less crying. Participant 8 admitted, "I didn't know it would involve so much crying." Some of the participants also expressed a desire to be forewarned about the stressful nature of the experience. Participant 7 stated, "To know that the first however many days are like stressful and difficult but you eventually persevere and get through it." These findings were expected as prior studies have revealed that parents often find behavioural sleep interventions

challenging, for example, in relation to enduring crying (Etherton et al., 2016; Tse & Hall, 2008). Finally, a few participants would have preferred more education about the processes involved in the intervention. While Participant 6 asserted, "I think if she would have explained the psychology side to me. If she could have reassured me, but really explained it properly," others wanted more information regarding expected changes. Participant 8 explained this as follows:

"I think we were both a little surprised at how much of a change it would be. I guess we didn't expect it to be such a huge change. So we were a little bit surprised that we were doing all these things at once."

Prior research has demonstrated that parents often seek assistance with child sleep problems from social networks and popular media (Etherton et al., 2016; Whittall et al., 2021), which can be misleading. Whittall et al. (2021) proposed a model of potential barriers to implementing sleep interventions, which include potential social stigma and misinformation associated with sleep interventions, thus potentially preventing parents from looking for information on the topic. Based on the participants' need for more information, it is recommended that parents should be educated about the psychological and theoretical principles underpinning behavioural sleep interventions. This will enable parents not only to understand the processes involved, but also to manage their expectations and behaviour accordingly.

To conclude, during timeframe 1, poor sleep as a result of child sleep problems had an extensive effect on parental well-being. Parents predictably experienced fatigue, but also had less social contact. Furthermore, their child's sleep problem had a deleterious effect on their SWB. They also experienced challenges to their well-being: several parents perceived that they lacked support from their partners during this timeframe. Finally, many parents expressed a need for more information prior to the onset of the intervention.

### 5.4.3. Timeframe 2: During the Sleep Intervention

Throughout the interviews, the participants were asked to reflect on their experiences of the intervention and their well-being while they implemented the sleep intervention. Five themes were prominent. Most of these themes were expected given the questions in the interview guide and thus, analysed deductively: the experience of the sleep intervention (Theme 4), general challenges to well-being (Theme 2), need for more information and support (Theme 3) and protective factors of parental well-being during the sleep intervention (Theme 6). In addition, some participants expressed concern about the potential negative

consequences of implementing a sleep intervention (Theme 5), as evident from the inductive analysis. The thematic framework for Timeframe 2 is illustrated in Figure 3.

## Figure 3





**5.4.3.1. Theme 4: Experience of Sleep Intervention.** This theme was predetermined as it was a specific question in the interview schedule. It was interesting to note that most parents had both positive and negative experiences of the sleep intervention. Very few participants experienced either end of the continuum exclusively. Furthermore, it appears that they had certain cognitions or beliefs regarding the sleep intervention, which may have influenced their experiences.

The participants' *beliefs and experience regarding sleep interventions* seemed to have influenced their experience thereof. Two participants had prior experience, having used the sleep consultancy before. These participants did not mention a need for more information (Theme 3) as others did. Participant 1 declared, "I knew exactly what to expect." In fact, prior experience appeared to have changed their beliefs about sleep interventions. Participant 10, who had experience of a sleep intervention explained, "Having done sleep training with our first child I was definitely more bought into the benefit and understanding of,

like, why we were doing it, why it would be helpful." It is possible that these participants had seen the benefit in relation to their child's and their own sleep as well as any subsequent improvements in well-being. However, it is important to consider possible response bias in that participants who have not enjoyed successful prior experiences would be unlikely to attempt an intervention again. In fact, there is a dearth of information in the literature on non-responders (Loutzenhizer et al., 2014).

Regardless of prior experience many participants expected the sleep intervention to be difficult. Participant 4 exemplified this view as follows: "The first night we implemented it we thought it was going to go so badly." The majority of participants had some degree of negative experience during the sleep intervention, especially at the beginning of the implementation. This difficultly was related predominantly to ignoring, however briefly, a child's cries. Participant 4 added, "So it was difficult in the beginning to implement, the whole crying thing, not that they cry themselves out but you need to leave them a bit and it, it was stressful." There appears to have been a brief reduction in well-being during the implementation of the intervention, especially during the first few nights when the participants experienced increased negative affect. Participant 8 explained, "During the sleep training I had felt a lot more guilt and probably I would say sadness just listening to them cry so much." Prior studies have revealed that parents find it distressing to ignore a child's cries, even for a few minutes (Blunden & Bails, 2013; Blunden et al., 2016; Loutzenhiser et al., 2014). Etherton et al. (2016) proposed that this is due to a biological imperative to respond to a crying infant. Considerable polarisation can also be found in parenting literature, that is, ignoring a child's cries to improve sleep versus the importance of responding to an infant's distress for optimal development and attachment (Blunden & Dawson, 2020). Parents who consistently and frequently respond to a child's signals are likely to experience extinction-based sleep interventions as difficult because they are counter to their beliefs and established patterns of behaviour.

It appears that although several participants' stress also increased during the intervention, it was short-lived and improved once the child's sleep improved. Participant 2 explained, "The first night, I, was very stressful, because I didn't know what was going to happen. I didn't know if this is going to work... But then once I saw that it's working I would say I was stress free." Participant 5 expressed a similar experience: "The first day is obviously quite rough, the first two or three days is very much an adjustment, but after that we got such benefit." Despite the relatively short duration of stress, two participants related that they had an overall negative experience. Participant 8 explained, "It was actually quite traumatic for me. My husband was okay, but for me it was something that I was actually very

unhappy doing." Participant 7 shared, "Going through the whole sleep training was probably one of the hardest things I've ever had to do." Although the stressful nature of sleep interventions has been highlighted in the literature, a review conducted by Reuter et al. (2020) demonstrated that studies rarely address the reasons sleep interventions are difficult to implement. Qualitative studies have confirmed that parents can experience the implementation as stressful (Loutzenhiser et al., 2014), especially on the first night (Honaker et al., 2018). Honaker et al. (2018) further noted that the increased stress is the consequence of infant crying, which concurs with the present study. Swain et al. (2014) argued that sensitive caregiver responses are driven by neurocognitive mechanisms. Amongst others, a child's cry signals the need for physical proximity (Maldonado-Duran & Lecannelier, 2019), which a sleep intervention requires parents to ignore. Attempting to override these neurocognitive responses could potentially cause a stress response in parents. In addition, the participants in the present study also cited that lack of knowledge, uncertainty regarding the approach and fear of potential negative consequences contributed to their perceived increased stress. This suggests that the barriers to sleep intervention implementation as proposed by Whittall et al. (2021) also exacerbate parental stress during the intervention.

Notably, two mothers also experienced negative perceptions related to their own parenting. Participant 8 explained how her perceptions originated from ignoring her children's cries: "I felt terrible. I felt like the worst mother in the world to let them cry like that." Participant 4 experienced it as a lack of comforting children:

"In the beginning, it was a bit hard because we had to take the dummies away and then we had to put them in their own room, so it was literally a big change. I felt like a bad mother, um, for doing that, um, because you take their comfort away."

These decreased perceptions of parenting during a sleep intervention have not previously been noted in the literature. The participants related lowered perceptions of parenting concurrently with increased negative emotions, specifically guilt and fear. However, a few participants who made this observation suggested that other factors may have contributed to this experience. It is possible that parental beliefs related to childrearing and responsiveness may have influenced perceptions of parenting during the intervention. Vigil (2012) stated that culturally shaped ideals of being a *good mother* can exert a strong influence on maternal identity and performance. Furthermore, mothers who do not make themselves available constantly to their children are often labelled as *bad mothers* (Büskens, 2001). In this regard, Csányi and Kerényi (2021) proposed that the good mother may be elucidated as one who performs all expected motherhood tasks correctly and if she does not perform all these tasks correctly, she is labelled a bad mother. By ignoring, even briefly, their children's cries, the relevant participants possibly classified themselves as a *bad mother*, thus potentially explaining these findings.

Notwithstanding the negative experiences noted previously, several participants also shared *positive experiences during the intervention implementation*. Many participants perceived that the programme provided to them by the sleep consultants worked well. Participant 4 related, "So all the stuff they gave us literally worked." In addition, a number of participants spoke about the programme positively and observed that, despite the increased stress described by many, they felt comfortable or in control throughout the experience. While Participant 5 explained, "Overall it was quite a pleasant experience, quite a comfort to have formal guidelines," Participant 3 said, "I never once felt that I was out of control of the situation." It was also deemed helpful that the programmes allowed the participants to respond to their children's signals. This was elucidated by Participant 3 as follows:

"I felt that because I was allowed to go into the room and I was allowed to pick them up if I felt that they were in distress or sad or whatever, that made it a lot easier. Knowing that I wasn't just leaving them for three hours just to cry it out."

This relates to some participants' desire to maintain an ability to respond to their child. Moreover, it suggests that parental beliefs regarding sleep interventions influence their SWB during implementation. These participants reported less subjectively perceived stress during the intervention because they could periodically check on their child. This concurs with Blunden and Dawson's (2020) belief that some parents may experience extinction methods as behaviourally or ideologically challenging and that sleep interventions incorporating a measure of responsiveness are beneficial for such parents. Moreover, it is noteworthy that cultural norms influence beliefs regarding parenting, including perception and treatment of sleep problems (Whittall et al., 2021). One may infer that this influences the experience of sleep intervention implementation and is thus an important consideration when formulating treatment plans.

It appears that the clear guidelines presented to the participants were perceived as beneficial as they provided them with a sense of security throughout the process. The participants knew the steps that were in place and which needed to be followed. While Participant 2 related, "Everything was clear and it was a clear plan of action and we followed it and it worked," Participant 9 explained, "It was very structured, and there was a plan for the three different changes in levels." Some of the participants even expressed regret at not doing the intervention earlier. Participant 9 revealed, "I could have done the intervention sooner. Um, that would have helped I think, many of the situations."

A scarcity of research was found on positive experiences related to sleep intervention implementation when reviewing the literature. The sense of comfort and control reported in the present study was ascribed to the formal guidelines and parental responsiveness that the programme provided. This finding is similar to that revealed by Tse and Hall (2008) who noted that parents found step-by-step guidelines helpful. This further accords with Honaker et al. (2018) who found that parents found GE and EwPP was more beneficial for them than their children. Furthermore, some participants regretted not participating in the intervention earlier, which indicates that they changed their beliefs regarding sleep interventions. It is possible that these participants were hesitant to start an intervention due to concerns they had at the time or as some participants related, attempted an intervention out of desperation for more sleep despite their concerns.

Irrespective of whether the participants had a positive or negative experience, they were satisfied with the results. Participant 5 explained, "You know it would have been very, very rough to wake up every hour or every two hours, um, so I think it probably saved us in a lot of ways. So it's very good." Participant 2 related, "We couldn't believe, after the second night he only woke up once, and then third night he was sleeping through." While Participant 7 shared, "A few weeks down the line obviously we're reaping the benefits of it." Participant 8 noted, "There definitely was an improvement" and Participant 1 asserted, "So I mean now she sleeps all night in her own cot and only wakes up once. So yes, a dramatic improvement." As noted previously, the efficacy of sleep interventions has been examined extensively from a quantitative perspective and confirmed that GE and EwPP improves child sleep (Hall et al., 2015; Meltzer & Mindell, 2014; Rafihi-Ferreira et al., 2019), with efficacy rates ranging from 60% in community samples (Loutzenhiser et al., 2014) to over 80% in research samples (Črnčec et al., 2010; Honaker et al., 2018). Qualitative research has not confirmed the efficacy of these sleep interventions and parental perceptions have not been sufficiently explored. While Tse and Hall (2008) included a question on efficacy in their study, the success or lack thereof was not discussed. Therefore, the findings of the study extend the knowledge in this regard. However, these findings should be interpreted with caution as they may only be relevant in successful interventions.

The findings reveal that parental beliefs about sleep interventions may have influenced their experiences during the intervention. This relationship appears to be multifaceted as many participants seemed to change their beliefs to a more positive orientation after a successful intervention. Furthermore, while all the participants were satisfied with the results and reported getting more sleep, it appears that the implementation of the intervention also elicited negative experiences, specifically in relation to emotions, stress and in some cases, perceptions of parenting. Nonetheless, some participants also shared positive experiences related to the intervention and its guidelines.

5.4.3.2. Theme 5: Concerns Regarding Potential Negative Consequences of Implementing a Sleep Intervention. During this timeframe, some of the participants were apprehensive about the potential negative outcomes of implementing a sleep intervention. Concerns regarding consequences were related specifically to potentially harming their child. Parents expressed concern and anxiety with regards to how the child would experience the sleep intervention as well as the potential long-term damage that the intervention might cause. This theme suggests the absence of parental well-being as it appears to have elicited negative emotional experiences for some of the participants, specifically fear, and influenced their experiences of the sleep intervention.

It was evident that the participants were concerned about *the child's understanding of the intervention* and any potentially resultant negative experiences. It appears that parents, while requiring improved sleep, also had a strong desire to avoid distressing their child. The short-term discomfort created by the intervention was juxtaposed with the participants' desire to maintain or improve their child's well-being, which consequently caused them to suffer negative emotions. A few participants were concerned about how their child might experience the intervention and whether their child would understand what was happening. Participant 8 explained, "I felt like they were so young that they don't understand why all of a sudden mommy and daddy are holding me until I sleep and now they're leaving me to cry by myself and they're watching me," and Participant 3 related, "I didn't want her to feel, well for them to feel like I had abandoned them."

Even though research has revealed there are a lack of negative outcomes when implementing a sleep intervention (Akdoğan, 2018; Bilgin & Wolke, 2020; Giesbrecht et al., 2020; Gradisar et al., 2016; Price et al., 2012), some of the participants still had *concerns about potential long-term harm* that might result from the intervention. Participant 2 asked, "Am I going to scar this child for life, what am I doing?" and Participant 6 explained, "I was worried about attachment stuff, and about emotional things, and that it could possibly, um, cause some kind of, um, just any kind of emotional damage later in life, or trust or anything like that." Prior studies have noted the importance of parental concerns regarding sleep interventions. Parents fear potential negative consequences if they ignore their child's cries (Blunden & Dawson, 2020), including the possibility of the child being harmed in some way (Blunden & Baills, 2013; Tse & Hall, 2008) and the potentially adverse effect on the attachment between the parents and child (Etherton et al., 2016). While the literature has often referred to the potential harm caused to the child, the results of the current study revealed that the participants also experienced concern about how their child would experience or interpret the intervention. This finding is consistent with that of Loutzenhizer et al. (2014) who found that parents experienced the intervention as stressful for their child. A possible explanation for these concerns, despite the lack of evidence of an association between crying as a result of the intervention and any harmful consequences, is that some academic literature as well as the popular media have advocated against extinction-based sleep interventions (e.g., Etherton et al., 2016) and spread misinformation (Whittall et al., 2021). These sources have cited findings that have raised concerns over the well-being of children during interventions (e.g., Middlemiss et al., 2012). Even though there are methodological concerns regarding some of these studies (discussed in section 3.6.1.4), parents might nonetheless be misinformed and thus, concerned as a result.

**5.4.3.3. Theme 2: General Challenges to Well-Being.** Additional challenges that were experienced during the sleep intervention implementation were related to the routine that needed to be established as well as differences in child temperament.

Several participants spoke about the difficulty of establishing or changing their *routine during the sleep intervention*. The sleep interventions required parents to adjust both daytime and night-time routines, for example, to avoid sugar and television after 16:00 and implement specific bedtime routines before putting the child in their cot or bed. Some participants experienced this as difficult. Participant 8 shared:

"We were changing so many things at once. We were doing the self-soothing, we took away bottles at night... we took away dummies, we tried to stick to this new routine and like specifically no fruits after this certain time, to screen time after this certain time. So it was quite an adjustment for everyone actually."

This finding broadly concurs with Tse and Hall (2008) who found that parents experienced difficulties adhering to routines. Parents who lack the appropriate knowledge of child sleep contribute to their children's sleep problems, specifically with regards to inconsistent sleep routines (McDowall, Elder, et al., 2017), possibly because adjusting to the routine involves changing not just the child's routine, but parental routines and behaviours as
well. During a sleep intervention, parents need to incorporate new structure into their daily lives and reduce behaviours such as immediately responding to a child's calls or reading more stories at bedtime. Research on status quo bias has revealed that individuals tend to favour the status quo rather than change their routines (Thorgeirsson & Kawachi, 2013), likely for fear of regretting the alternative (Nicolle et al., 2011). Within the context of child sleep, parents may conceivably fear and regret upsetting their child if they change their own behaviour. However, similar to stress, it also appears to be short-lived. Participant 4 related, "I felt like ok, I need to do it like this and that and that, and its structure... it was a bit more intense but literally it lasted two or three days and then ok, it's fine, it's over."

It is noteworthy that all the participants who had twins found the *differences in child temperament* a challenge. This subtheme is notable in that it only surfaced in the interviews with those participants who had twins. Although perhaps not practically feasible, these participants specifically expressed a desire for more individualised approaches for each child as it was challenging to attempt the same approach for children with different temperaments. Participant 8 related:

"We were successful with my son, but with my daughter she, you know I think with twins they're not the same, they're different... I just feel, it's not a one size fits all when it comes to this kind of thing."

This finding raises an important question related to whether parents of twins should employ different sleep interventions, each suited to the specific child's temperament. In this respect, Kahn et al. (2019) revealed that EwPP is more suitable than GE for children with separation anxiety and recommended more personalised interventions. Although to a certain extent, personality is inherited (Vukasović & Bratko, 2015) and personalities of monozygotic twins are more similar than dizygotic twins (Bratko et al., 2017), studies have demonstrated that twins' personalities differ (Harris, 2010). Therefore, it can be argued that personalised interventions should be employed for twins, as they would be used for children from different families.

The challenges that the participants experienced during the sleep intervention appear to have contributed to a decrease in SWB, specifically in relation to increased perceived stress and negative affect. **5.4.3.4. Theme 3: Need for Information and Support.** During the implementation of the intervention, several participants expressed a need for more support in relation to the implementation of the intervention as well as assistance with managing their emotional experience. Although the sleep consultant was consistently available for between two and three weeks, some participants expressed a *need for more emotional support* during the intervention as it was difficult for them to manage the stress and resultant negative emotions that they experienced. Participant 7 related, "I mean, our sleep trainer was, she was amazing and she was so patient and kind but you're kind of 'You're not going through it'" (Participant 7). Participant 8 reported a similar experience:

"I mean I know the sleep consultant is always there, but they were more in a kind of a, she gets you to keep persevering and keep trying but not really there to understand the parent's emotions during all of, to tell them and guide them on what to do next but not really kind of let them talk through how they're feeling" (Participant 8).

The few qualitative studies that have been conducted on sleep interventions have shown that parents often require support during implementation, either from family and friends or professionals (e.g., Tse & Hall, 2008). The finding of this study is consistent with that of Tse and Hall (2008) who revealed that some parents felt emotionally isolated during the intervention. The participants in the present study experienced the decrease in wellbeing difficult to manage and while the support from the sleep consultant was valued in relation to practical support, they perceived emotional support was lacking. Importantly, Loutzenhizer et al. (2014) found that parents who noted lower support experienced GE sleep interventions more stressful and less effective. Efficacy may decrease because parents who do not receive sufficient support cannot sustain the required sleep intervention procedures.

The request for emotional support was not specifically limited to the sleep consultant and is also not the sole responsibility of professionals (Loutzenhizer et al., 2014). In this regard, Participant 7 voiced the need to speak to other parents that had recently completed an intervention: "Maybe speaking to couples or moms who have done the training before." This suggests that some parents may not receive enough support from their friends and family, possibly because of conflicting views on the use of interventions to manage child sleep problems. It may also indicate a need for reassurance that the interventions are worth doing and leads to change in child sleep patterns. Even though the methodology of the current study involved daily support from the sleep consultants, the findings indicated a need for more targeted support. Specifically, the participants may have required more emotional support so as to manage the negative emotions and stress that they experienced during the sleep intervention.

In addition, a few participants also expressed uncertainty regarding the implementation of the intervention itself when they responded to their child. Participant 5 acknowledged, "I think we were a bit bad with implementing the technique without an inperson guidance." Loutzenhizer et al. (2014) found that higher levels of support during the intervention were associated with decreased perceived stress. It was apparent that some participants experienced uncertainty and negative emotion during the sleep intervention, which could potentially have been mitigated by increased support structures during the implementation of the sleep intervention.

**5.4.3.5. Theme 6: Protective Factors of Parental Well-Being During Sleep Intervention.** Despite the difficulties inherent in modifying a child's sleep behaviour, the participants also reflected on various factors that aided their well-being during the intervention. In the analysis, protective factors were defined as anything that potentially enhanced parents' well-being during the intervention. These protective factors were specifically related to support.

A prevalent subtheme was *support from the sleep consultant*. Several participants mentioned the assistance rendered by their consultants and their availability throughout the intervention as conducive not just to the success of the intervention but also to their wellbeing. Participant 4 acknowledged, "I must be honest she was literally talking to me the whole of the implementation like every day after each nap, so she was very helpful. Very, very helpful." This finding concurs with Tse and Hall (2008) who found that participants relied a great deal on the research staff for support.

Finally, as with support from the sleep consultant, several participants also perceived *support from a partner* as an important protective factor to their well-being during the process. This subtheme centres on emotional support as well as supporting the decision to implement the intervention. Participant 10 explained, "I think it's definitely easier when you're a team... You know, like, both splitting the duties as much as possible but then mainly, if one of you doesn't believe in it, then, that's not easy." Extant literature has highlighted the importance of support in the family during childcare activities (Whittall et al., 2021). Furthermore, Agache et al. (2014) noted that fathers' heightened involvement in childcare is known to improve mothers' SWB during the first three years, during which time child sleep interventions are more likely to be implemented. Although the researcher is unaware of

studies that have specifically examined partner support during an intervention, based on the findings of the present study, it appears to be an important contributor to parental well-being during an intervention. Participant 5 expressed this as follows:

"My husband was one hundred percent committed and with me in it. Um, so, and I think that made an absolute difference for me, because it would have been impossible to do it where it's just you on your own, um, trying to make it work because especially when she's crying and you're outside and you have to just wait for another 30 seconds, being with another person saying ok we must continue, it, um it was really fantastic."

It was apparent that while the participants were satisfied with the results of the intervention, the experience itself was often negative, at least in part. The participants experienced several challenges and had concerns related to the consequences of the intervention. Furthermore, they expressed a need for more support during the intervention. Parental SWB appeared to have decreased briefly during the sleep intervention implementation. Negative emotions in the form of guilt and fear were prominent, as well as heightened stress. In spite of this, this decrease in SWB seemed to be temporary. It may have been offset by the support received from the sleep consultant or partner as well as a structured, responsive programme.

In conclusion, the majority of parents had some negative experiences during the intervention, which were often related to hearing their child cry. However, the parents also related some positive experiences such as feeling in control and the ability to respond to their child. Despite the negative experiences, all the parents were satisfied with the results of the intervention even though some of them experienced stress and negative emotions related to concerns about the consequences of implementing a sleep intervention. Several parents also experienced challenges to their well-being during the intervention, specifically the difficulty of establishing or changing routines as well as the differences in child temperament when implementing intervention and support, specifically in relation to emotional support so as to cope with their reduced well-being and practical support with the intervention. Finally, support from the sleep consultant and partners acted as protective factors to the parents' well-being during the intervention.

# 5.4.4. Timeframe 3: After the Sleep Intervention

Contrary to the perceived negative experiences during the sleep intervention, the participants expressed considerable improvements in several facets of their well-being after the sleep intervention. Although these improvements were largely a result of improvements in routine and sleep, it is apparent that the participants also enjoyed enhanced confidence in parenting as a result of the sleep interventions. Nevertheless, there were exceptions as some of the participants reported that certain facets of well-being had not changed. The thematic framework for Timeframe 3 is illustrated in Figure 4.

# Figure 4



Timeframe 3 – Themes and Subthemes after the Sleep Intervention

**5.4.4.1. Theme 7: The Intervention Led to Improved Well-Being.** Changes in wellbeing were attributed to several factors. The *improvements in routine* appeared to have led to changes in the participants' daily life, specifically with regard to more free time and increased predictability with respect to what they could expect during the day and night. The participants seemed pleased about the predictability of the routine and that they could plan their time accordingly. As Participant 7 explained:

"I know now when she goes down for her morning nap then I can leave for work and I have about six hours where she can stay with the nanny before I know she'll want to get fed again by me. So ja, I like the planning and the predictability."

Furthermore, the increased free time allowed the participants to engage in pleasant and relaxing activities without worrying that they would be disrupted. Participant 4 explained, "I have my time as well. I can watch TV, I can cook, I can, um, you know do things without any interruptions. So that is like something to look forward to." This appeared to have improved facets of well-being as a result. Participant 11 related, "My mood has improved from getting my me-time back."

Given the interview guide, it was to be expected that the participants would discuss the facets of well-being measured in this study. Nevertheless, it was interesting to note the level of purported improvement the participants spoke about. Several related that their mood, perceived stress, satisfaction with life, couple satisfaction and affect improved directly as a result of the enhanced routine. Participant 8 shared, "My mood has improved, um, I think the routine has been good for everyone." It was apparent that some of the participants experienced the structure that the routine provided as beneficial, especially in improving perceived stress. Participant 5 explained, "...there's a protocol for every, you know, okay what time is it, it's not feed time yet so this is the procedure you try and calm her without, so I think reduced anxiety and stress." It appears that improvements in mood were related to the routine itself as well as the free time it created. Participant 4 shared, "... you do need a bit of down time so my mood is much better because I'm like, okay cool, tonight I can do this, I can relax a bit, so my mood is for sure it's better." When the researcher asked Participant 7 how satisfied she was with life at that point in comparison to before the intervention, she answered, "What I like about the routine is that I can plan my life [laughs]. I'm a planner so, ja definitely satisfied." Participant 10 explained it succinctly as follows:

"You know your routine's working which means you're stressing less, which means you should be more positive, which means your outlook on life is better, which means you probably have a better relationship with your partner. I mean it just, like it all adds up, right?"

Prior studies have revealed the importance of a consistent bedtime routine, with improved outcomes for the child (Mindell & Williamson, 2018) and the parents (Mindell et al., 2009). Similarly, the literature on family routines has postulated that changes in routine are associated with changes in outcomes for children (e.g., Anderson & Whitaker, 2010; Spagnola & Fiese, 2007) and can enhance the well-being of families (Fiese, 2007; Mindell & Williamson, 2018). While there is an absence of studies that have explored changes in daytime routine directly as a result of sleep interventions, one may infer that regardless of the mechanism for change, improved daytime routines should yield similar outcomes. The influence of routines on parental SWB specifically has been largely neglected in the literature. In this regard, routines provide stability in the family (Koome et al., 2012). Weisner (2010) posited that routines that have, amongst others, more balance and enough predictability provide greater well-being for the family. This is supported in the present study in that several participants commented on the increased predictability of their daytime and night-time routines as well as the enhanced well-being they experienced as a consequence. The increased predictability described by the participants may have afforded them with a sense of control over their daily lives. In this regard, prior studies have revealed that a sense of control has a significant positive effect on well-being (Yang & Ma, 2020), which may explain the present findings.

Several participants recognised the value of spending time with their partner and in particular, acknowledged that they had more time together as a couple because of the improved routine. Participant 3 explained, "...because now we know by 7:30 they will be in bed we have us time, um, and that they'll sleep you know, and that's really important for the two of us." The time together was not only at night, but related to daytime as well. Participant 7 related:

"Like I said the afternoon she has that lovely two- to three-hour nap so now on the weekend we schedule things there. So we are going to watch a movie or fix things around the house we haven't done in a while, so it's nice we get to bond a little bit during that time."

Almost every participant related that the improvements in routine led to more free time to engage in leisure activities or spend time with their partner. Previous research has revealed an association between free time and increased positive affect, and decreased negative affect and stress (Offer, 2016). Chen et al. (2020) found that individuals experience higher levels of positive emotions and less variability in emotions when they engage in more frequent leisure time. Fredrickson's (2001) broaden-and-build theory posits that positive emotions allow for an accrual of resources which then promotes well-being (Chen et al., 2020). In addition, it appears that family leisure activities contribute to the parents and children's well-being (Coyl-Shepherd & Hanlon, 2013). The participants explained that the improved routine contributed directly to their improved SWB after the intervention, thus supporting extant literature.

Arguably, the most prominent subtheme to emerge from the analysis was that of *improved sleep enhanced parental well-being*. Every participant stated that sleep improved

as a direct result of their child's improvements in sleep. This appears to have had a substantial effect on some or even all facets of well-being, as measured in this study. Many of the participants valued the improvements in their child's well-being as a consequence of enhanced sleep and acknowledged the subsequent improvements to their own well-being. Participant 1 related, "Her mood has improved dramatically because she is no longer overtired, so that is why the general mood has improved in the house because we no longer have a little girl who screams and moans all day long." It was apparent that the child's well-being as well as improved sleep was important. Participant 10 shared, "I think you know when your kid's happy and sleeping... then you're just all in a better state."

Enhanced parental sleep also had a direct effect on well-being, as the majority of participants stated that they observed improvements in most facets of well-being. They acknowledged an improvement in mood and perceived stress as a result of more sleep. Furthermore, they experienced an increase in life satisfaction. Some participants even referred to the experience as life changing. In relation to couple satisfaction, it was interesting to note that some of the participants observed improved partner support as a consequence of more sleep. They also reported increased positive affect towards their partner. Finally, the participants related improved overall affect, specifically a decrease in negative affect and an increase in positive affect. These changes are related to emotions in general as well as having a more specific focus, namely, improved affect towards children and night-time. Select quotations, which portray the enhancements in well-being, are provided in Tables 10 and 11. For ease of reference Table 10 encompasses quotations related to SWB, while Table 11 encompasses quotations related to couple satisfaction, perceived stress and depression.

# Table 10

Quotations Relating to Improved Subjective Well-Being as a Result of Improved Parental Sleep

Topic as discussed by	Quotation
participants	
Life satisfaction	
Increased satisfaction with	"Huge improvement, you know everything just feels
life	better when you're getting some sleep"
	(Participant 9)
	"Life's better because we're all sleeping more"
	(Participant 10)
Positive affect	
Improved affect towards	"I also find, and my husband noted it actually last
children	week. I don't get angry with them as quick as
	what I used to" (Participant 3)
	"I have a lot more patience for my kids, so um, ja l
	have quite a lot more patience. So I don't lose
	my temper so quickly, I enjoy the time that I'm
	spending with them and it's not like I'm irritated
	and angry" (Participant 6)
More positive affect	"I still can't believe it but I'm like very hopeful"
	(Participant 4)
	"I get enough sleep now, um, in the mornings I'm
	actually just, I'm happy" (Participant 6)
Improved affect regarding	"I'm relieved that night-time now is something that I
nights	look forward to and not dread" (Participant 8)
J.	"I'm less stressed because now I'm looking forward to
	bedtime" (Participant 11)
Negative affect	
Decreased negative affect	"I would say I think anger was guite a big one, and I'm
	not so angry anymore" (Participant 6)
	"There's less anxiety around him and his sleeping"
	(Participant 9)

# Table 11

Quotations Relating to Improved Couple Satisfaction, Stress and Depression as a Result of Improved Parental Sleep

Topic as discussed by participants	Quotation
Couple satisfaction	
Improved partner support	"He is so involved and he helps with the children when
	he's here. You know he doesn't really do
	anything for himself. His whole life at the
	moment revolves around us, and, so he's very
	involved" (Participant 2)
	"I feel like the roles are definitely evened out between
	the two of us. I can leave him at bedtime and
	know that he knows how to put them down,
	um, and I can go and shower and enjoy my
	shower and not worry he's going to get angry
	with them" (Participant 3)
Improved affect towards partner	"I think we are also more, you know, nicer to each
	other" (Participant 4)
	"Because I now have more sleep and we both have
	more sleep as a result I think there's just less
	general irritability. You know it's just if you're
	tired it's easy to maybe misread a situation"
	(Participant 5)
	"All of that changed after the sleep training because
	then he'd come home and I'd be so happy and
	excited and be like how was your day and this,
	and it had like a ripple effect for him as well"
	(Participant 6)
	"I suppose we're also a little bit more patient with each
	other because we've got more sleep"
	(Participant 9)

Topic as discussed by participants	Quotation
Perceived stress	
Decreased perceived stress	"My stress levels decreased a lot" (Participant 6)
	"I'm probably less stressed because I'm not stressing
	about the night-time. I think because of that
	then I'm naturally less stressed and also
	because I'm sleeping better I'm probably able
	to manage my stress a lot easier" (Participant
	8)
Depression	
Improvement in mood	"I don't feel, I would say maybe like depressed? I don't
	feel so depressed anymore" (Participant 3)
	"Ever since we started getting more sleep, um, I was
	much, much happier. Like a whole different
	person, the whole household just got happier"
	(Participant 6)

There is a dearth of qualitative research on parental SWB in the context of sleep interventions. Even in clinical populations, the focus has been on parental perceptions of interventions and mode of delivery as opposed to any potential influence on well-being (e.g., Beresford et al., 2016). However, as discussed in section 5.3, multiple quantitative studies have shown that sleep interventions lead to positive outcomes in parents. While not within the scope of sleep interventions, Muller et al. (2019), in a qualitative study on maternal perspectives of pre-schoolers' sleep, revealed that mothers related an association between good quality sleep and improved child well-being the following day. This is supported by the finding of the present study. Muller et al. (2019) further found that following good child sleep, improved maternal sleep and associated improvements in stress, mental health and daytime functioning occurred. In the latter study, mothers also mentioned the importance of and need for free time in relation to their own well-being. These findings are broadly consistent with those of the present study in that they support the association between improved parental sleep and enhanced parental well-being through improved child sleep.

It is important to note that a few participants stated that while they saw the benefit of improved sleep, they did not notice any improvements specifically in their mood, couple satisfaction or satisfaction with life. Participant 2 suffered from severe postnatal depression and thus, did not experience any enhancements in mood or satisfaction with life. However, she asserted, "If anything the sleep intervention helped me from probably getting worse."

When the researcher asked the other participants if they experienced any change in their mood and couple satisfaction, two expressed similar reflections. Participant 10 stated, "I wouldn't say there were like significant mood shifts," and Participant 9 noted, "I wouldn't say it's changed. We were good before and after."

Increased confidence in parenting was another subtheme that emerged. It was apparent that the tools parents learned during the intervention improved their ability to cope with the challenges of childrearing and enhanced their perceptions of themselves as parents. Some of the participants lacked knowledge of age-appropriate routines prior to the sleep intervention, which may have contributed to their child's sleep problems. Participant 10 explained:

"And another thing that shifted and helped was we actually landed up putting her down like 15 minutes earlier, and it was bazaar like, you don't think 15 minutes makes a difference but with her it does. So she was actually getting to a stage where she was just a bit too over tired in the evening sometimes which then made it harder for her to sleep."

Research has suggested that there are noticeable gaps in parental knowledge of healthy child sleep requirements (McDowall, Galland et al., 2017). Furthermore, parental education on appropriate child sleep may contribute to improved child sleep (Malow et al., 2014) as well as parent sleep (Halstead et al., 2021). In the present study, the participants expressed pleasure at acquiring this knowledge. Participant 2 explained, "The best part for us was we actually learning that he was supposed to be in bed by seven... So, um, ja, getting to know that he was supposed to be in bed by seven was very nice." Responsiveness was another factor that appears to have been addressed by the sleep intervention. The participants stated that they responded immediately and consistently to their child's signals prior to the sleep intervention, regardless of whether the child was in distress or not. After the intervention, they seemed to be more confident in determining whether their child was simply vocalising as opposed to signalling distress. Two of the participants expressed their confidence as follows:

"I'm a lot more comfortable because I know that they are safe, they're ok. Um, it might just be they, you know are having a bad dream, or they're just not comfortable in that position, and I know that they will figure it out" (Participant 3); and "Before the implementation when we put them to bed then we'd go down and watch TV and you hear a peep of them through the monitor we would literally run up, and you don't have to do it. It's ok if they go wah, it's ok. So I'm a bit more relaxed with that as well" (Participant 4).

It was noteworthy that a few participants also related improved perceptions of their parenting as a result of the sleep intervention. Participant 5 acknowledged, "I really I feel like I have much more to give in my daytime hours because of the sleep we are getting at night. And I'm happy and I'm, you know much more loving towards my child." This appears to have had a direct influence on overall well-being, as portrayed by Participant 3:

"My marriage has improved because of it. My relationship with the twins has improved because of it. I feel like I am a better mom because I sleep and because they sleep, so ja my whole life has just been completely changed because of it."

It was apparent that in their evaluations of well-being as a whole, some of the participants placed considerable importance on their perceptions of childcare. Furthermore, these results broadly reflect those of Muller et al. (2019) who found that mothers thought quality pre-schooler sleep was beneficial in relation to what they referred to as "mother–child connections" (p. 2030).

Accordingly, it appears that, in general, the participants experienced an improvement in SWB after the sleep intervention, directly as a result of the improved routine and sleep and indirectly as a consequence of enhanced child well-being. Some participants also related improved perceptions of parenting as a result of the intervention.

To conclude, after the sleep intervention, the participants shared considerable subjective enhancements in most or all facets of their well-being as a result of the sleep intervention. They attributed their improved well-being to improvements in their routine, improvements in sleep and in some instances, increased confidence in parenting.

#### 5.4.5. Concluding Summary: Qualitative Study

It is safe to conclude that the parents perceived substantial improvements were made in their overall well-being as a result of the sleep intervention, although not all facets necessarily improved. In addition, the parents related improvements in facets indirectly related to their well-being, but deemed equally important, such as child well-being and increased confidence in parenting. As noted in section 4.5.4, to acquire a holistic understanding of potential changes to parental well-being, the following criteria were employed to select interviewees: parents whose well-being was lowest during Phase I, parents whose well-being did not change significantly between the two phases, parents whose well-being was classified in the mid-range and parents whose well-being was highest during Phase I. The subjective experience of enhanced well-being was noted by all participants, regardless of category. All the respondents reflected on their decreased wellbeing due to inadequate sleep prior to the intervention, which was compounded for some parents by a lack of partner support. After the implementation of the sleep intervention, some parents perceived that their well-being could have been improved during the experience if they had received more information before they started the process. It is important to acknowledge that certain facets of well-being decreased during the intervention, namely, perceived stress and affect even though this appeared to be short-lived and improved considerably after the implementation. However, it remains imperative to consider how such decreases in well-being can be ameliorated. The latter is examined through the guidelines, which are presented in Chapter 6.

## **Chapter 6: Conclusion and Recommendations**

# 6.1. Introduction

Parenting is an important as well as often challenging task. Although parental wellbeing is important for child development, it is also crucial in and of itself (Nomaguchi & Milkie, 2020). While the influence of child sleep interventions on certain facets of parental well-being has been examined in the literature, there is a paucity of research that has specifically explored the subjective well-being (SWB) of such parents. Furthermore, there is a dearth of qualitative research on parental experiences of child sleep interventions and SWB (Tse & Hall, 2008). Moreover, research has focused primarily on negative constructs or experiences (e.g., Hall et al., 2017; Price et al., 2012; Symon et al., 2012) and only limited attention has been afforded to the positive (Symon & Crichton, 2017). Therefore, the broad aim of this study was to explore how the implementation of child sleep interventions influence parental well-being, both quantitatively and qualitatively, and develop guidelines for the support of parental SWB when implementing such interventions. In this chapter, a summary of the research findings is outlined and guidelines to support parental well-being when implementing sleep interventions are presented. Recommendations for further research are outlined and limitations considered. The researcher's personal reflection concludes the chapter.

## 6.2. Summary of Research Findings

A summary of the main research findings, integrating both the quantitative and the qualitative results, are subsequently presented by employing the same timeframes discussed in Chapter 5.

# 6.2.1. Summary of Findings in Timeframe 1: The Incidence of Well-Being in Parents of Children with Sleep Problems

While the first aim of this study was to determine the incidence of SWB in parents of children with sleep problems, the second aim was to examine the absence of well-being, as evident in the incidence of postnatal depression and perceived stress in parents of children with sleep problems. Well-being was operationalized as the presence of positive affect, low levels of negative affect and moderate to high levels of life satisfaction. In addition, high couple satisfaction and the absence of postnatal depression and perceived stress, which are facets of well-being specifically related to early parenthood, were included in this operational definition. Although only mothers opted to participate during Phase II and accordingly, the qualitative findings relative to Timeframe 1, namely,

experiences of well-being before the sleep intervention, thus including paternal experiences as well.

The study revealed contrasting findings in relation to parents' well-being. The descriptive statistical results obtained from the measuring instruments during Phase I indicated that the participants experienced moderate overall well-being. While the participants experienced high life satisfaction and positive affect, the presence of negative affect, moderate couple satisfaction, mild depression and moderate stress signified decreased well-being. This was supported by the qualitative findings as the participants related a decrease in overall well-being experienced as a result of their child sleep problems (Theme 1). Thus, while the quantitative findings revealed some aspects of high well-being, in the interviews, the participants perceived lowered well-being, specifically related to life satisfaction, affect, couple satisfaction, mood and perceived stress. Furthermore, during the qualitative phase, they also identified specific focal points for their decreased well-being. Although parental sleep was, as expected, a primary concern, the participants also related that decreased child well-being as a result of inadequate child sleep contributed to their own reduction in well-being.

Although there is a paucity of research on parental life satisfaction in the context of sleep problems, the researcher contended in section 3.5.3 that it is plausible that sleep deprivation as a result of child sleep problems could reduce parents' life satisfaction. This was supported by the qualitative findings of the study. While the quantitative results revealed high life satisfaction and positive affect, during the qualitative phase of the study, the participants related decreased life satisfaction due to poor sleep. This suggests that while the quantitative measures revealed the sample as a whole experienced high life satisfaction, the participants who were interviewed perceived a decrease in life satisfaction.

Prior literature has revealed that life satisfaction is moderately stable (Fujita & Diener, 2005), but that contextual factors play a role in the variability of life satisfaction across time (Lucas & Donnellan, 2007). In relation to changes in life satisfaction during early parenthood, inconsistencies have been noted in the literature. While some studies have found life satisfaction increases (Mikucka, 2016; Pollmann-Schult, 2014), others have demonstrated decreases during early parenthood (Stanca, 2016). Contextual factors implicated in potential decreased life satisfaction include unemployment (Stanca, 2016), the birth of a second child (Mikucka & Rizzi, 2020) and paternal involvement (Agache et al., 2014). The present findings provide new insight in relation to contextual factors implicated in parental life satisfaction, specifically that of child sleep problems. Furthermore, the present

findings support the notion that paternal involvement influences life satisfaction: the mothers in the study emphasized that partner support is an important facet. The findings also indicated that the life satisfaction of these parents could be improved.

The quantitative findings further demonstrated the presence of negative affect, which is line with existing literature (Smith et al., 2019; Tsai et al., 2014). The qualitative findings showed that parents experienced negative affect, which was specifically directed at their children and partners. During the qualitative phase, the participants related that they experienced anger, resentment and irritation. They also stated they suffered negative affect related to the unpredictability of their days and nights. In essence, they experienced an increase in negative affect as a result of their children's sleep problems.

Prior research has shown that mothers and fathers experience increased anger towards children with sleep problems (Cook et al., 2017; Morrell, 1999), possibly because of demands related to sleep (Morrell, 1999) and the resultant loss of leisure time (Qian et al., 2013). While a few studies have found no increase in negative affect following sleep deprivation or restricted sleep (e.g., Rossa et al., 2014; Talbot et al., 2010), the incidence of negative affect among participants in the current study concurs with the majority of research (Almondes et al., 2021; Becker et al., 2020; Gordon & Chen, 2014; Krizan & Hisler, 2019; Minkel et al., 2012; Vandekerckhove & Wang, 2018). In addition, it is understood that stress has an effect on relationship satisfaction (Randall & Bodenmann, 2017). Furthermore, Donato et al. (2018) posited that intense stress can lead to a notable decrease in affect towards romantic partners. Parenthood is known to exacerbate parental stress (Nomaguchi & Milkie, 2020). This stress is more extreme during the first few years after birth (Umberson et al., 2010), which is a time often associated with sleep disruption in children and parents (Medina et al., 2009; Tikotzky & Shaashua, 2012). Therefore, it is plausible that the stress associated with parenting and poor sleep has a detrimental influence on affect towards partners. The findings of the present study support previous literature regarding the incidence of negative affect in parents of children with sleep problems (Bell & Belsky, 2008; Chu & Richdale, 2009; Meltzer & Montgomery-Downs, 2011; Mihaila & Hartley, 2018). In addition, this study affords new insight into the potential causes and direction of this negative affect, that is, the negative affect directed at children, partners and the unpredictability of daily routine. In highlighting the negative affect directed towards partners, specifically in the form of anger and resentment, the findings of this study have important implications for potential interventions to improve couple satisfaction. If targeted interventions such as those directed at improving partner communication or conflict resolution can decrease negative affect, well-being may improve as a consequence.

It is not surprising, given the increased negative affect towards partners, that the quantitative results revealed only moderate couple satisfaction, which is supported by the decreased couple satisfaction as a result of child sleep problems that the parents related during the interviews. In addition to negative affect towards partners, parents also cited less time together, not sharing a bed with their partner and forming of bad habits as reasons for the decline in couple satisfaction. One of the themes that emerged from the qualitative findings was that some participants felt a lack of partner support contributed to decreased well-being (theme 2). Although more evident in the interviews with the mothers, these participants felt that the onus of responsibility was on them to maintain emotional control when with their children were challenging because of tiredness and deal with the daily hassles of child-rearing. This compounded the negative affect they felt towards their partners. In the present study, both the mothers and fathers noted unfair division of duties and emotional support as a specific source of concern. Thus, the findings suggest that fathers of children with sleep problems also value and require partner support. Prior literature has established that although fathers and mothers share similar important support needs (Hartley & Schultz, 2015), fathers often do not have these met (Seymour et al., 2020; Shorey et al., 2017). The present findings support the notion of shared needs and demonstrate the need for bidirectional partner support in families of children with sleep problems. As noted previously, these results support the association between child sleep problems and decreased relationship satisfaction (Meijer & van den Wittenboer, 2007; Peltz et al., 2016).

The incidence of mild postnatal depression revealed in the quantitative results was also supported in the qualitative findings: the participants linked decreased mood directly to poor sleep. In addition, both the quantitative and qualitative data demonstrated increased perceived stress as a result of child sleep problems. As with mood, the participants associated this increase of perceived stress with lack of sleep. These findings are in line with existing research that has shown that mothers and fathers experience decreased mood as well as increased stress and negative affect as a result of child sleep problems (Giallo et al., 2011; Hall et al., 2017; Hiscock & Fisher, 2015). Furthermore, well-being is influenced by facets other than just parenthood. The present study was conducted during the Covid-19 pandemic and thus, the participants conceivably experienced more perceived stress as a result of the pandemic, which could potentially have influenced other facets of well-being. Therefore, the potential exists that the associated stress of the pandemic may have been reflected in the responses on the measures of parental well-being. However, during the qualitative phase, not all the parents perceived the pandemic as problematic or having a

negative effect on them. With the exception of one interview, decreases in well-being were directly attributed to child sleep problems. Therefore, it is plausible that the decreased well-being among the participants could be ascribed to poor child sleep, which is supported in the literature that was reviewed in Chapter 5. The findings from this phase of the study highlighted the need for interventions to enhance the well-being of parents of children with sleep problems.

#### 6.2.2. The Influence of Sleep Interventions on Parental Subjective Well-Being

As noted previously, the third and fourth research aims were to determine how child sleep interventions influence parental well-being. A further purpose of this study was to explore how parents who have chosen to implement sleep interventions experience well-being in the context of the intervention. To accomplish these aims, while a pretest-posttest design was employed to determine the significance of differences in well-being after the sleep intervention, in-depth interviews were conducted with 11 participants to explore experiences of well-being before, during and after the intervention. Whereas the quantitative results reflect changes to well-being after the intervention.

6.2.2.1. Summary of Findings in Timeframe 2: Parental Well-Being During the Sleep Intervention. The themes that emerged from the thematic analysis revealed that the participants experienced a brief decrease in SWB during the sleep intervention. Although only a few qualitative studies on parental experiences of sleep interventions have been conducted, the findings have demonstrated that parents experience the implementation as stressful (Loutzenhiser et al., 2014), especially on the first night (Honaker et al., 2018). Furthermore, Blunden and Baills (2013) noted that this stress has been associated with difficulty hearing their children cry. In the present study, both positive and negative experiences were reflected in the experience of a sleep intervention (Theme 4). These were often influenced by parental beliefs about interventions as well as the participants' overall satisfaction with the results. Negative experiences were related predominantly to enduring child cries, which increased many participants' stress and negative emotions, thus supporting prior literature. A few participants, notably only mothers, perceived their own parenting negatively, which may be ascribed to the association between maternal availability and responsiveness as well as being a *good mother* (Vigil, 2012).

The decrease in well-being did not appear to last long as most of the participants related improvements within one to three days. These findings are in accordance with those of Honaker et al. (2018) who found a significant decrease in stress within a week of

implementation. Positive experiences were primarily related to the structured guidelines of the programme. Despite the stress of the first few nights, several participants felt comfortable and in control during the implementation, thus supporting the findings of Tse and Hall (2008) who noted that parents found step-by-step guidelines beneficial. In addition, a few participants expressed regret at not participating in an intervention earlier. All the participants noted satisfaction with the results of the intervention, regardless of whether they experienced it as positive or negative.

Concerns of some participants related to the potential consequences of the intervention (Theme 5) as well as the challenges they experienced during the implementation of the intervention (Theme 2). This contributed to the participants' decreased well-being. A few participants experienced negative emotions such as fear because of their concerns regarding how their child experienced the intervention, and the potential long-term harm the intervention might cause. This finding is in line with prior literature, which has highlighted parental fears related to the parent-child attachment bond (Etherton et al., 2016) and some form of harm to the child (Blunden & Baills, 2013; Tse & Hall, 2008). The challenges that the participants experienced during the sleep intervention contributed to their increased perceived stress. Several parents found the required adjustments and changes in routine difficult, similar to the difficulties associated with sticking to routines that Tse and Hall (2008) revealed. The parents of twins experienced differences in child temperament a challenge, thus supporting Kahn et al.'s (2019) claim that one intervention is not suitable for all children.

When discussing their SWB during the intervention, some participants expressed a need for more information and support (Theme 3). A few participants acknowledged they were uncertain about the implementation of the techniques, which contributed to their increased perceived stress and negative affect. They added that they required more information and support about appropriate implementation. This is not surprising as few parents will necessarily be familiar with behaviour theory and techniques underpinning sleep interventions. Furthermore, several participants articulated a desire for more emotional support to assist in the management of increased stress and negative affect during the intervention. This is consistent with prior literature that revealed that parents often require support during an implementation, either from family and friends or professionals (e.g., Loutzenhizer et al., 2014; Tse & Hall, 2008). Support could potentially be obtained from sleep consultants as well as other parents that have completed a sleep intervention.

Several protective factors to well-being (Theme 6) emerged from the analysis. The participants spoke consistently about the daily support they received from their sleep consultants as conducive to their well-being throughout the intervention. It is likely that the practical as well as social support that the consultants provided contributed to the participants' experiences of well-being. Siedlecki et al. (2014) revealed that social support is associated with enhanced well-being. Several participants also perceived support from their partners as beneficial. Finally, partner support was practical as well as emotional and appears to be an important protective factor to well-being during an intervention. This is not surprising because partner support and responsiveness contribute to well-being (Cutrona & Russell, 2017).

6.2.2.2. Summary of Findings in Timeframe 3: Parental Well-Being After the Sleep Intervention. The quantitative results revealed an improvement in the parents' SWB after the intervention. With the exception of couple satisfaction, all the facets of well-being as measured in this study showed significant improvements. While there was a statistically significant increase in life satisfaction, with a moderate effect size, the mean scores on positive affect increased and negative affect decreased, both with a large effect size. The mean scores of postnatal depression and perceived stress also decreased, again with a large effect size. These improvements are supported by the qualitative findings. The participants related substantial improvements in their satisfaction with life, affect, stress and postnatal depression after the intervention. In relation to positive affect, the participants noted more positive emotions towards their children and partners. In addition, they reported more positive emotions towards night-time, all of which were issues of concern during Timeframe 1. The participants also appeared to experience an overall increase in positive emotions and a decrease in negative emotions after the intervention.

The participants attributed the improvements in well-being directly to an improved routine and enhanced sleep as well as increased confidence in parenting, which resulted from the intervention. The participants stated they enjoyed more free time and increased predictability in their daily lives. They added that an improvement in their child's well-being, which resulted from improved child sleep and a stable and consistent routine, contributed to their own well-being. The knowledge of healthy child sleep requirements and the tools that parents were provided with to maintain appropriate sleep hygiene appears to have increased parental confidence. Some of the participants also perceived their own parenting had improved as a result of the intervention.

While there was a trend towards improvement on the mean scores, couple satisfaction did not increase significantly. The qualitative findings on couple satisfaction were mixed. Some of the participants related improved emotions towards their partners and improved partner support, which contributed to overall well-being. Other participants felt that there were no improvements in their couple satisfaction. Despite the evidence of decreased couple satisfaction as a result of child sleep problems, it appears from this study, which concurs with the literature (Smart & Hiscock, 2007), that sleep interventions may not influence this facet of well-being. A possible explanation is that while the resolution of child sleep problems should improve parental sleep, the conflicts related to parenthood are not necessarily influenced by child sleep. Moreover, facets other than children and sleep quality, such as religion and differentiation of self, affect couple satisfaction (Ferreira et al., 2014; Homaei, 2019). Therefore, other interventions should be considered to enhance couple satisfaction specifically.

All the participants from the qualitative phase of the study related an improvement in their well-being as a result of the intervention. Through triangulation of the quantitative and qualitative data, the results showed that the participants experienced an increase in life satisfaction and positive affect as well as a decrease in negative affect, postnatal depression and perceived stress. In essence, the findings indicate that with the exception of couple satisfaction, sleep interventions could enhance SWB of parents of children with sleep problems.

# 6.3. Guidelines for Supporting Parental Well-Being When Implementing a Sleep Intervention

The final aim of the study was to develop guidelines to support parental well-being when implementing a sleep intervention. The study revealed that while overall SWB seemed to improve after implementing a sleep intervention, the participants experienced a decrease in well-being for a short period during the intervention. This decrease was related specifically to increased perceived stress and negative affect as well as decreased parental efficacy. The study further highlighted that some participants experienced negative affect after the intervention, which was specifically related to maintaining the daytime routine. Accordingly, the following guidelines are proposed:

Guideline 1: On a cognitive level, the findings of this study indicate that it is essential to address parental concerns regarding potential consequences of a sleep intervention. Parental education on the safety of sleep interventions is imperative. As a result of their concerns, the participants sometimes deviated slightly from the programme, which the sleep

consultants provided, often by responding earlier to their child's signals. This was especially evident during graduated extinction (GE), where parents were expected to leave the room and wait a certain period of time before responding. Therefore, it is recommended that parents be provided with additional resources on the safety and benefits of such interventions. Credible resources such as scholarly work have established that no short- or long-term harm results from sleep intervention implementation, which may be provided to parents (see Akdoğan, 2018, Bilgin & Wolke, 2020; Giesbrecht et al., 2020; Gradisar et al., 2016; Price et al., 2012). Specific issues can be addressed in relation to parental needs, for example, with regards to fears related to attachment as well as child well-being. It is expected that this will reduce negative affect such as guilt and fear that parents might experience.

Guideline 2: On a practical level, unless parents have prior experience with implementing a sleep intervention, they are likely to be unfamiliar with the procedure and its requirements. Therefore, they may experience increased perceived stress and negative affect as a result. The participants related a lack of understanding of and knowledge about behavioural sleep interventions and the processes involved. Consequently, it seems to be essential to educate parents on the psychological and theoretical principles underpinning behavioural sleep interventions. This will enable parents not only to understand the processes involved, but also to manage their expectations and behaviour accordingly. It is important that such information be provided before the implementation of the intervention, possibly in the form of a second contact session so as to avoid too much information during a single session. In this regard, it is necessary to manage parental expectations by providing additional information on what the sleep intervention entails and practical information on how to implement any required techniques. If possible, in-person demonstrations would be valuable to assist parents with specific techniques. It is expected that this will reduce negative affect such as uncertainty, concern and fear as well as perceived stress that parents might experience. This is also likely to increase parental confidence in their ability to implement the intervention. In essence, such information could thus support parental wellbeing.

Guideline 3: Several participants raised concerns about lack of partner support, which led to increased negative affect and perceived stress. The presence of partner support was considered to be a protective factor to well-being during the intervention. Therefore, it is advisable that prior to the intervention the importance of partner support during the implementation be discussed. The presence of partner support could reduce negative affect towards partners and reduce perceived stress, while facilitating well-being during the intervention. Where partners do not support the decision to implement a sleep intervention, additional emotional and practical support should be provided to the parent (see guideline 7), or such parents could be referred to counsellors or psychologists for psychological support.

Guideline 4: The literature has revealed that parents may find it difficult to ignore their children's cries, however briefly (Blunden & Bails, 2013; Blunden et al., 2016; Loutzenhiser et al., 2014). The findings of the present study concur with this view and indicate that parents experience increased negative affect and perceived stress as a result of ignoring their child's cries. It is inherently difficult to modify a child's sleep because it requires deviating from a familiar pattern of behaviour, and children express negative emotions and discomfort through cries (Chóliz et al., 2012). Therefore, crying during a sleep intervention is anticipated. Accordingly, it is considered important to manage parental expectations regarding the likelihood and expected duration of crying, without extenuation. If parents express concerns about their ability to manage their child's cries during the implementation, it might be advisable to consider a more responsive intervention. Managing parental expectations about crying and providing an alternative intervention, if necessary, should reduce negative affect and perceived stress during the intervention.

Guideline 5: Several participants in the present study considered the change in routine to be challenging, which resulted in increased perceived stress and negative affect. To address this challenge, it is recommended that practitioners prepare parents for the necessary changes in routine. This may necessitate extending the intervention to allow a week before the implementation of GE or extinction with parental presence (EwPP) so as to adjust daytime and bedtime routines. It is expected that this will reduce the perceived stress and negative affect produced by the many changes which occur simultaneously with the sleep intervention.

Guideline 6: Several participants in the study acknowledged that the structured routine of the sleep intervention was conducive to their well-being as it decreased perceived stress and negative affect. Tse and Hall (2008) revealed similar findings in a qualitative study. Therefore, it is recommended that structured, step-by-step guidelines be provided to parents. These guidelines should be comprehensive and detailed and allow parents to transition to more responsive interventions if required.

Guideline 7: Many participants noted a need for more emotional support during the intervention to manage the negative affect, stress and potential decreased parental efficacy, either from the sleep consultant or from parents that have successfully completed

interventions. Since consultants are the first point of contact, it is important that they are aware of parents' potential affective experience and provide emotional support in addition to the practical support already provided. In this regard, Loutzenhizer et al. (2014) asserted that such support is not the sole responsibility of consultants. Similarly, in the present study, participants suggested that speaking with other parents might be beneficial. The creation of parental support platforms by employing social media to enable easy access such as, for example, facilitated Facebook or WhatsApp groups could provide additional emotional support for families who implement sleep interventions. Social support has been associated with enhanced well-being in clinical (Usta, 2012) and non-clinical (Siedlecki et al., 2014) populations as well as when utilising online platforms (Naslund et al., 2016). The use of online platforms might be helpful for parents who do not receive support from their partners or extended family.

Guideline 8: Finally, the consistent availability of the sleep consultants as a prominent protective factor to well-being was noted by the participants. They acknowledged the assistance rendered by their consultants as well as their availability throughout the intervention as conducive not just to the success of the intervention but also to their well-being. Therefore, the participants deemed it beneficial that their dedicated sleep consultant was available to advise them on a daily basis. Tse and Hall (2008) found that participants relied considerably on research staff for support. Together with the findings of the present study, this suggests that parents who implement sleep interventions have a need for this type of support during an intervention. Therefore, it is recommended that sleep consultants or practitioners be consistently and frequently available to parents during an intervention. In Figure 5, a summary of the suggested guidelines when implementing sleep interventions is portrayed.

# Figure 5

Guidelines for promoting Parental Well-being when Implementing Sleep Interventions



# 6.3. Limitations of the Study

Despite the potentially valuable findings of this study, it has several limitations that should be taken into account. First, the findings of this study are based on a sample that was skewed towards mothers because fathers did not participate in the quantitative phase of the study. Furthermore, only two fathers participated in the qualitative phase. Consequently, the conclusions drawn regarding fathers' experience of well-being in the context of child sleep interventions should be interpreted with caution as other fathers could have different experiences. In addition, all the participants were part of a nuclear family and the qualitative interviews were only conducted with parents from South Africa. Those who do not raise children in a nuclear family and outside the context of South Africa may have different experiences. Additionally, sleep intervention implementation is predominantly a Western or individualistic socio-cultural practice and the findings can therefore not be generalised outside of this context.

Second, the methodology of this study included intensive, daily support from sleep consultants, something which is not necessarily practised in other GE and EwPP interventions. Therefore, the findings cannot be generalised to the broader population or GE and EwPP interventions in which less support is offered by sleep consultants. However, as one of the first studies to consider parental SWB in the context of sleep interventions, the

goal of the study was not to generalise, but to acquire a richer understanding of the phenomena under investigation.

Third, during Phase III, the data collection was conducted between one and a half and three months after the start of the intervention. Therefore, no long-term conclusions on the influence of child sleep interventions on parental SWB can be made. It is proposed that further research be conducted on the long-term influence of child sleep interventions on parental well-being.

Fourth, as this study did not include a control group, various confounding variables could have influenced the quantitative results, for example, children maturing during the two points of data collection, external events such as the Covid-19 pandemic, the individual characteristics of the sleep consultants, and the participants' familiarity with the questionnaires. However, the mixed method research design allowed for triangulation and thus, quality of the data.

Finally, while this study included both quantitative and qualitative data analysis of participants who found the intervention to be an overall negative experience, the qualitative findings of this study did not include information on parents who did not experience success with the intervention. Previous research has shown that the efficacy of GE and EwPP in research or clinical settings is over 80%, which indicates that approximately 20% of the participants were not successful (Črnčec et al., 2010; Honaker et al., 2018). Thus, further information on the effect of sleep interventions on parental well-being when the intervention was not successful is warranted.

# 6.4. Contribution of the Study

This study contributes to an understanding of parental well-being in the context of child sleep problems and has provided deeper insight on the influence of sleep interventions on parental SWB. The findings make several contributions to the current literature from a perspective of positive psychology and parental well-being. First, this study contributed theoretically to the field of positive psychology in accordance with second wave positive psychology. Lomas (2016a) noted that second wave positive psychology expands the framework of positive psychology towards an understanding that well-being involves the interplay between both the positive and negative, provided the negative contributes to well-being in some sense. This was revealed by parents' negative experience of decreased well-being for a short period during the intervention, which led to enhanced SWB after the intervention. In addition, the difficulty of raising a child with sleep problems can lead to the

promotion of health-related behaviour and safeguarding of family well-being (Sviggum et al., 2018).

Second, the findings of this study expand the existing knowledge base regarding the incidence of well-being in parents of children with sleep problems. The results highlighted the effect of poor sleep on the well-being of the participants. Decreased well-being is important in and of itself, but also has implications for family well-being and childcare. Therefore, the findings have highlighted the need for interventions to support and improve the well-being of such parents.

Third, to the best of the researcher's knowledge, this study appears to be the first to examine the influence of child sleep interventions on parental SWB as defined by Diener (1984), from either a quantitative and/or qualitative perspective. As noted previously, there is a dearth of research considering sleep interventions and parental life satisfaction. Furthermore, the scarcity of research related to the affective experiences of parents struggling with child sleep problems, particularly positive affect, has also been addressed in the current study. Hence, the findings contribute to new knowledge in the field.

Fourth, this study suggests that sleep interventions could improve parental well-being as operationalised in this study. These findings have important implications for developing strategies to enhance the well-being of parents of children with sleep problems as child sleep interventions appear to be a viable and useful approach.

Fifth, on a practical level, this study has also led to the development of guidelines to support parental well-being when implementing sleep interventions. No such guidelines exist currently and thus, this study contributes to the application and practice of positive psychology principles in the context of child sleep interventions. Finally, the insights realised from this study may be of assistance to practitioners to find more effective and acceptable solutions for parents, thus leading to enhanced programme development and the promotion of improved parental well-being when implementing an intervention.

# 6.5. Recommendations

Based on the findings and limitations of this study, the following recommendations for further research are made:

• It is recommended that similar studies on sleep interventions and parental well-being should include more fathers.

- Studies on parental well-being implementing less support-intensive sleep interventions, are recommended to establish its effect on parental well-being.
- Similar studies on the influence of sleep interventions on parental well-being in different family structures are recommended. Specifically, such studies should include parents who are single, separated or divorced without having a romantic partner. In addition, families where extended members engage in child-rearing should also be included in future studies.
- Quantitative studies that employ an experimental methodology are recommended to determine differences between parental well-being in control *versus* experimental conditions.
- As the qualitative phase of this study only included South African parents, qualitative studies to explore more in-depth information on parental experiences of sleep interventions and well-being in different countries and within different cultural contexts may be valuable.
- Only two sleep interventions were explored in the present study. Therefore, further research is recommended to determine the impact of other types of sleep interventions on parental well-being.
- It is also recommended that longitudinal studies on the long-term impact of sleep interventions on parental well-being be conducted.
- Given the lack of improvement in couple satisfaction that emerged from this study, it is recommended that alternative interventions be considered for parents of children with sleep problems to address this aspect of well-being.
- Finally, it is recommended that research be conducted on the influence of child sleep interventions on parental well-being of parents when the intervention has not been successful.

# 6.6. Personal Reflection

I have read that research is often autobiographical. This is certainly the case with my PhD. My interest in child sleep interventions originated from my two beautiful, but sleepless children. For three long years when we had very little sleep I saw how it influenced our family's well-being. My husband and I briefly spoke about sleep interventions, but had little knowledge about the process. We accepted the popularist view that *sleep training* would have a negative effect on our babies. Therefore, our cognitions about sleep interventions affected our willingness to attempt it. However, once I started exploring the topic more academically, I realised that there was a disparity between what friends and family thought and what was revealed in the literature.

After exploring sleep interventions in more depth, it became apparent that parents find it difficult to implement. Yet, there was very little information on this academically. It was my hope to find some clarity on how parents experienced sleep interventions and how this influenced well-being. By this time, my daughters were sleeping and the change in our personal well-being was substantial. While I saw the difference sleep could make to our wellbeing, I still retained some beliefs that sleep interventions would detract from parental wellbeing. Therefore, when I started the literature review, I was quite surprised to find the opposite. Like a pendulum, I swung from one end of the spectrum to the other, convinced that sleep interventions were wholly positive and beneficial.

However, as I pursued my research on this topic and I heard the accounts of the parents, my views became more balanced. I understood that, holistically and from a positive psychology perspective, negative and positive can be found in the sleep intervention experience. While the benefits, if successful, far outweigh the detriments, those detriments should not be ignored. Quantitatively, the results indicated improved well-being. Qualitatively, parents were unanimous in their agreement that well-being improves. Nevertheless, they also acknowledged that the experience itself was not easy. The nuances of parental experiences are important because expectations influence perceptions. If parents expect an easy journey, the challenges might be startling. On the other hand, if parents expect it to be difficult, they might never attempt a sleep intervention and potentially fail to benefit from the resultant enhanced well-being. On a personal level, I hope that this research will allow other parents to experience the benefits of sleep interventions, without negating the potential challenges. It is also hoped that the guidelines developed in this study will alleviate some of these challenges and where possible, facilitate the journey towards well-being.

## 6.7. Final Conclusion

By employing a mixed methodology to determine the incidence of parental well-being in the context of child sleep problems, the findings of this study contributed to previously neglected aspects within the field of knowledge. The moderate incidence of well-being as operationalised in this study highlighted the need for interventions to enhance parental wellbeing. While there were brief decreases in well-being during the intervention, the quantitative and qualitative findings indicate that the implementation of sleep interventions improve parental well-being, at least in the short term. The findings from the qualitative data were employed to develop guidelines to improve parental well-being further, particularly during the intervention. The outcomes of this study have grown the body of research on child sleep interventions and could promote the development of such interventions, with a particular focus on the improvement of parental well-being. Therefore, further research in this regard is highly recommended.

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## Appendix A: Information Letter of the Study





## Information Letter

Dear prospective participant

I, Jacomien Muller, am doing research for a PhD degree at the University of Pretoria on the effect of sleep interventions on parental well-being, as well as how parents experience these interventions. I intend to explore changes in parental well-being after they have implemented sleep interventions with their children.

#### Purpose of the research

Many children struggle to fall asleep quickly, and wake up several times per night. As a result, the amount and quality of sleep of the parents is affected. This can have a negative effect on parental well-being. Parents can use sleep interventions (often termed sleep training) to help their children sleep better, as you have chosen to do. You are being invited to take part in this research because you have approached the Good Night sleep consultant to assist you with teaching your child to sleep better. I would like to find out how your well-being is affected by the implementation of sleep interventions with your child or children. Specifically, I am interested in possible changes in your emotions, mood, levels of stress, satisfaction with life and couple satisfaction. If you have any questions before signing the consent form please feel free to ask.

#### Procedure & confidentiality

I will ask you to complete 5 short questionnaires before you start the sleep intervention, and again about six to eight weeks after the intervention. Completion of the questionnaires should take no longer than 20 minutes. I also want to understand how you specifically experienced the implementation of sleep interventions, and to do this I would like to interview you to discuss your experiences. The discussion will take place at a time of your choice and will be voice-recorded, but your identity will remain anonymous. The interview will last approximately 30 minutes. You have the right to access your data should you choose to do so and can contact me for the information. All information obtained during the course of this study will be regarded as confidential, and only the researcher will have access to the data and be able to identify you as participant. The data will be stored in the safe at the Department of Psychology for 15 years.

### Voluntary Participation

Your participation in this research is entirely voluntary. If you choose not to participate all the services you receive at Good Night will continue and nothing will change. You can also withdraw from the study at any time.

Room 11.16 Humanities Building University of Pretoria, Private Bag X20 Hatfield 0028, South Africa Tel +27 (0)12 4202329 Email psychinfo@up.ac.za www.up.ac.za

Faculty of Humanities Fakulteit Geesteswetenskappe Lefapha la Bornotho

### Benefits and risks

Participating in this study will allow you a chance to discuss your experience of doing the sleep intervention with your child or children. The data from this research will be used to develop guidelines for implementing sleep interventions that improve the well-being of parents. Taking part in the study should not cause any discomfort or risk. However, should you experience any distress due to your participation in this study I will refer you to a psychologist for further assistance.

Thank you for considering participating in my study. If you decide to participate please sign the attached consent form.

Mrs Jacomien Muller Researcher jacomien.muller@gmail.com Prof. Tharina Guse Supervisor, Faculty of Humanities University of Pretoria tharina.guse@up.ac.za

> Faculty of Humanities Fakulteit Geesteswetenskappe Lefapha la Bomotho

Page 2 of 2

## Appendix B: Consent Form to Participate in the Study



## **Consent to Participate**

Completing the questionnaires below indicates your voluntary consent to the following:

- To complete a questionnaire about my emotions, mood, perceived stress, life satisfaction and marital satisfaction
- To take part in an individual or telephonic interview with the researcher. During the interview I will be asked to share my experiences of the sleep intervention
- For the interview to be recorded on a digital voice recorder
- For my biographical and sleep log data to be used in the research
- For the information I provide to be used and published by the researcher. This
  information will be treated confidentially and my identity will be protected
- To inform the researcher if I experience any distress as a result of my participation in this study, to receive the necessary support.

Mrs Jacomien Muller

Researcher

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## Appendix C: Semi-Structured Interview Guide

These questions serve as an outline for the qualitative phase of the study. The interview will commence with the researcher explaining the purpose of the study. Participants will be prompted to elaborate where the researcher feels necessary. As such, while all the questions provided here are presented to the participants, it may be that additional prompts and questions are used for some participants, depending on the nature of the interview.

- 1. How did you experience implementing the sleep interventions?
- 2. What technique did you use? (To differentiate between GE & EwPP)
- 3. What did you feel worked for you? What didn't?
- 4. How satisfied are you with life now as compared to before the intervention?
- 5. Tell me about any changes in your mood that you have experienced, if at all.
- 6. Have you noticed any changes in the emotions you experience, and if so, please tell me about it.
- 7. How have your levels of stress changed from before the intervention to after the intervention, if at all?
- 8. Tell me about how stressful it was to implement the technique, if at all.
- 9. Tell me about your interactions with your partner. How has it changed after the intervention?
- 10. How has your relationship satisfaction changed since after the intervention?
- 11. Can you tell me about anything else that have happened recently that might have affected your mood, stress, or satisfaction?
- 12. What do you feel would have made the journey easier?
- 13. Is there anything else that you want to add that has not been mentioned yet?

# Appendix D: Ethical Approval from the University of Pretoria's Research Ethics Committee



Dear Mrs J Muller

Project Title: Researcher: Supervisor: Department: Reference number: Degree: The effect of infant and child sleep interventions on parental well-being Mrs J Muller Prof C Guse Psychology 21129691 (HUM051/0619) Doctoral

I have pleasure in informing you that the above application was **approved** by the Research Ethics Committee on 28 November 2019. Data collection may therefore commence.

Please note that this approval is based on the assumption that the research will be carried out along the lines laid out in the proposal. Should the actual research depart significantly from the proposed research, it will be necessary to apply for a new research approval and ethical clearance.

We wish you success with the project.

Sincerely

MMUSham

Prof Maxi Schoeman Deputy Dean: Postgraduate and Research Ethics Faculty of Humanities UNIVERSITY OF PRETORIA e-mail: PGHumanities@up.ac.za

> Fakulteit Geesteswetenskappe Lefapha la Bomotho

Research Ethics Committee Members: Prof MME Schoeman (Deputy Dean); Prof KL Harris; Mr A Bizos; Dr L Blokland; Dr K Boovens; Dr A-M de Beer; Ms A dos Santos; Dr R Fasselt; Ms KT Govinder, Andrew; Br E Johnson; Dr W Kelleher; Mr A Mohamed; Dr C Puttergill; Dr D Revburn; Dr M Soer: Prof E Taliard: Prof V Thebe: Ms B Tsebe: Ms D Mokalao