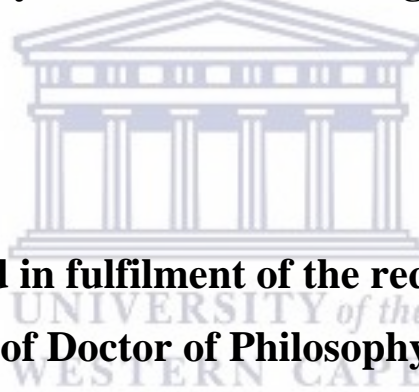


**PARENTS' PERCEPTION OF PSYCHOSOCIAL  
FACTORS ASSOCIATED WITH HEALTH  
COMPROMISING BEHAVIOURS RELATED TO ORAL  
HEALTH AMONG ADOLESCENTS IN SOUTH AFRICA**

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**A thesis submitted in fulfilment of the requirements for the  
degree of Doctor of Philosophy (PhD)**

**Supervisor: Prof Sudeshni Naidoo**

**December 2016**

## ABSTRACT

Even though the composition of the family unit has undergone considerable change in recent decades due to a variety of socio-economic developments, it remains the first learning environment for the child. The influence of the family continues throughout adolescence and indeed throughout the life-course of the individual to varying degrees because parents are powerful role models and influence. Their subjective perception of the psychosocial factors associated with health compromising behaviours is critical in the quality of parental participation in the prevention and control of these behaviours.

The aim of the present study was to investigate parents' perception of the psychosocial factors outside marital and socioeconomic status that are associated with health compromising behaviours related to oral health among adolescents. The design was a qualitative exploratory one and the research strategy was inductive, deductive and abductive. A non-probability purposive theoretical sampling method was employed and data collected from five focus group interviews using a guiding questions schedule. The sample size of 37 was determined by theoretical saturation.

Participants were aged between 28 and 75 years. Each of the five focus groups was homogeneous in the sense of shared experience but diverse in terms of professions. The data analysis used in this study was the grounded theory approach and a substantive theory was generated that addressed the mitigation of adolescents' unhealthy behaviours. The substantive theory provides an effective and holistic approach to the problem of adolescent unhealthy behaviours. It went beyond the risk factors approach to comprehensively address the root causes of five adolescent health compromising behaviours viz. alcohol consumption, smoking, inadequate fruit and vegetables consumption, inadequate oral health care and inappropriate sugar consumption.

The study recommended that babies be weaned off six months exclusive breastfeeding with meals not sweeter than the maternal breast milk and infants be introduced very early to the taste of locally available fruits and vegetables followed by the gradual introduction of these fruits and vegetables and a variety of other nutrient-dense foods starting when solid foods are being introduced.

## DECLARATION

I declare that every aspect of this thesis entitled “Parents’ perception of psychosocial factors associated with health compromising behaviours related to oral health among adolescents in South Africa” was undertaken by me. It has not been submitted for any degree or examination in any other university or tertiary institution, and all the resource materials used and/or quoted have been duly acknowledged.

Dr Tuweyire Erherhebue Okagbare

Date: November 2016



## DEDICATION

This thesis is dedicated  
to the memory of Professor Aubrey Sheiham



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## ACKNOWLEDGEMENTS

First and foremost, all the honour and glory, praise and thanks for the completion of this thesis goes to the ALMIGHTY GOD and my God Jesus Christ.

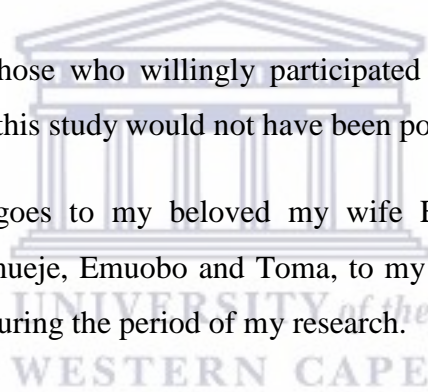
My very special thanks and deep gratitude to Prof. Sudeshni Naidoo, my supervisor, for her unfailing encouragement, meticulous assistance and expert guidance throughout my long journey.

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# TABLE OF CONTENTS

<b>Abstract</b>	<b>ii</b>
<b>Declaration</b>	<b>iv</b>
<b>Dedication</b>	<b>v</b>
<b>Acknowledgements</b>	<b>vi</b>
<b>Table of Contents</b>	<b>vii</b>
<b>Chapter 1: Introduction</b>	<b>1</b>
1.1 Background	1
1.2 Rationale for the study	2
1.3 Potential benefits of the study	4
<b>Chapter 2: Literature review</b>	<b>6</b>
2.0 Introduction	6
2.1 Family life, structure and communication	6
2.2 Socioeconomic status (SES) of parents/guardians on health behaviours	8
2.3 The school environment	9
2.4 Peers/friends' influences	10
2.5 Gender	11
2.6 Determinants of alcohol use	12
2.7 Determinants of smoking	13
2.8 Determinants of cannabis (dagga) use	14
2.9 Determinants of substance use	14
2.10 Determinants of eating habits	15
2.11 Educational aspiration	16
2.12 Health locus of control	17
2.13 The influence of religiosity	18
2.14 The influence of individual self-efficacy	20
2.15 The influence of individual self-esteem	21

2.16	Mastery over relative economic and social position	22
2.17	The role of individual sense of coherence	22
2.18	Determinants of injuries	24
2.19	Determinants of physical activity and body image	24
2.20	Determinants of general well-being	26
2.21	Determinants of oral health	26
2.22	Concluding remarks to the literature review	32
<b>Chapter 3: Aim and objectives</b>		<b>34</b>
3.0	Introduction	34
3.1	Problem statement and research Question	34
3.2	Aim and specific objectives	35
3.3	3.3 Conclusion	35
<b>Chapter 4: Research design and methods</b>		<b>36</b>
4.0	Introduction	36
4.1	Justification for a qualitative study	36
4.2	Study design	36
4.3	Research strategy	37
4.4	Research setting	38
4.5	Study population	40
4.6	Data collection	41
4.7	Ethical considerations	48
4.8	Records	49
4.9	Dissemination of findings	49
4.10	Conclusion	49
<b>Chapter 5: Grounded theory methodology applied in data analysis</b>		<b>51</b>
5.0	Introduction	51
5.1	Background to grounded theory methodology	51



5.2	Grounded theory and extant literature	52
5.3	Benefits of grounded theory	54
5.4	Criticisms of grounded theory	55
5.5	Data Analysis	55
5.6	Conclusion	58
<b>Chapter 6: Results</b>		<b>59</b>
6.0	Introduction	59
6.1	Adolescent identity crisis	61
6.1.1	<i>The adolescent period</i>	61
6.1.2	<i>Adolescents see themselves as adults</i>	61
6.1.3	<i>Adolescents prefer being socially acceptable among peers and friends</i>	62
6.1.4	<i>Adolescents like experimenting and imitating</i>	63
6.1.5	<i>Adolescents are impatient, naughty, rebellious, selfish and Stubborn</i>	64
6.2	Adolescents' unhealthy behaviours and potential modifiers	64
6.2.1	<i>Adolescent alcohol consumption</i>	64
6.2.2	<i>Adolescent smoking</i>	65
6.2.3	<i>Adolescent inappropriate sugar consumption</i>	65
6.2.4	<i>Adolescent inadequate fruit and vegetables consumption</i>	66
6.2.5	<i>Adolescent inadequate oral care</i>	67
6.2.6	<i>Adolescents' educational aspiration</i>	68
6.2.7	<i>Adolescents' religiosity</i>	69
6.2.8	<i>Adolescents' self-esteem</i>	70
6.2.9	<i>Adolescents' SOC (propensity to cope with stress)</i>	71
6.2.10	<i>Adolescents' race/culture</i>	72
6.2.11	<i>Parents as role models/ their unhealthy behaviours</i>	73
6.2.12	<i>Adolescent upbringing/home environment</i>	74
6.2.13	<i>Neighbourhood/society and schools</i>	76
6.2.14	<i>Advertisements, negative mass and social media</i>	77
6.2.15	<i>Availability and marketing of unhealthy products</i>	78



6.3	Core category	78
6.4	Mitigating adolescents' unhealthy behaviours	81
	6.4.1 <i>Parental knowledge</i>	81
	6.4.2 <i>Parent child relationship/communication and parental support</i>	83
	6.4.3 <i>Parental control and permissiveness</i>	86
	6.4.4 <i>Challenges faced by parents of adolescents</i>	86
	6.4.5 <i>Who should assist parents?</i>	88
6.5	Trustworthiness	89
6.6	Conclusion	90
 <b>Chapter 7: Discussion</b>		<b>91</b>
7.0	Introduction	91
7.1	Adolescent unhealthy behaviours and potential modifiers	93
7.2	Tame the taste buds and train the child positively from infancy through Preadolescence	102
7.3	Mitigating adolescents' unhealthy behaviours	104
7.4	Theoretical propositions	111
7.5	Evaluation of the proposed theory	113
 <b>Chapter 8: Concluding remarks and recommendations</b>		<b>120</b>
8.0	Introduction	120
8.1	Concluding remarks	120
8.2	Recommendations	121
 <b>References</b>		<b>124</b>

## LIST OF TABLES

Table 1: Summary of main determinants of health related behaviours among adolescents	29
Table 2: Summary of health related behaviours among South African Adolescents	32
Table 3: Demographic profile of Gauteng Province	40
Table 4: Profile of focus group participants (37)	54
Table 5: A comparison between objectivist and constructivist grounded theory	54
Table 6: Stages of analysis	59
Table 7: Components of the paradigm model of this study	80



## LIST OF FIGURES

Figure 1: Map of Gauteng Province, South Africa	39
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## LIST OF APPENDICES

Appendix A: Guiding questions schedule	163
Appendix B: Ethical approval	164
Appendix C: Participant information leaflet and informed consent	165
Appendix D: Tesch's data analysis approach	168
Appendix E: Summary of the memos of the data analysis that generated the substantive grounded theory	169

## LIST OF ABBREVIATIONS

BMC	BioMed Central
BMRB	British Market Research Bureau
CRFA	Common-risk Factor Approach
EUFIC	The European Food Information Council
GRRs	General Resistance Resources
GT	Grounded Theory
GTM	Grounded Theory Methodology
HBSC	Health Behaviour in School-Aged Children
IS	Information Systems
NCDs	Non-communicable Diseases
NMES	Non-milk Extrinsic Sugars
SOC	Sense of Coherence
WHO	World Health Organization

# CHAPTER 1

## INTRODUCTION

### 1.1 Background

The current emphasis of the New Public Health is on public health promotion using the common-risk factor approach (CRFA) (Sheiham & Watt, 2000) rather than the biomedical approach to health. A recent World Health Organization (WHO) oral health promotion framework highlighted the need to integrate oral health into general health promotion (Petersen, 2009) because of the evident similarities of risk factors for oral and for general health. Oral health promotion should therefore address all risk factors common to chronic non-communicable diseases (NCDs) and oral health in order to avoid their adverse general and oral health impacts. Such integrated interventions are likely to be more effective in reducing non-communicable diseases burden and compromised oral and general health-related quality of life. Many of the behaviours linked to the risk factors commence in adolescence.

The World Health Organization estimates that 70% of premature deaths among adults are due to health compromising behaviours (smoking, illicit drug use, reckless driving) initiated during adolescence (WHO, 2005). Therefore, enabling adolescents to acquire healthy lifestyles and avoid developing health risk behaviours is crucial. Unhealthy lifestyles in adolescence such as alcohol consumption, smoking, poor diet including the inappropriate consumption of refined sugars as well as low intake of fruit and non-starchy vegetables and risk taking, may predict the occurrence of adult chronic systemic conditions which may include or determine risk for poorer oral health status in adults.

Health compromising and health enhancing behaviours are adopted in adolescence and they often persist into adulthood (Paavola, Vartiainen & Haukkala, 2004; Kalavana, Lazarou & Christodoulou, 2011). Adolescence is characterized by rapid physical and psychological changes in the individual. It is also a period of emotional uncertainty with increasing demands from and/or influence of peers, schools and the wider society (Qidwai *et al.*, 2010).

Adolescents often turn more to peers for support and guidance (Qidwai *et al.*, 2010). Furthermore, adolescence is characterized by a strong tendency to experiment with risky behaviours. The courage for such experimentation is much greater at this stage than in later life (Miles *et al.*, 2001).

This tendency is related to the belief that immediate gratification will result from involvement in some of these unhealthy behaviours (Wiefferink *et al.*, 2006). The overload of stress from physical, emotional, social and sexual change makes adolescents potential victims of anxiety, withdrawal, aggression, poor coping skills and actual physical illness (Qidwai *et al.*, 2010). In extreme situations this has led to attempted and completed suicides (Spirito & Esposito-Smythers, 2006). In recent years there has been considerable increase in research determining the prevalence of self-harm among adolescents. This is not surprising as self-harm is a key predictor of attempted and completed suicide (Hawton, Houston & Shepperd, 1999). It is also pertinent to mention that adolescent health problems compound one another. For example, mental health problems may act as a potent risk factor for substance use and conversely, such substance use may impact negatively on adolescent well-being (Gilvarry, 2000).

The oral health status of adolescents is much influenced by social and psychological factors (Baker, Mat & Robinson, 2010). The following section reviews the influence of social and psychological factors on oral health behaviours among adolescents.

## **1.2 Rationale for the present study**

Thus far, there have been few published studies on the psychosocial factors associated with health compromising behaviours among adolescents in the African region. Some focused on a single behaviour (Resnick *et al.*, 1997); with fewer still on multiple health-related behaviours, but none addressed the perceptions of parents regarding these unhealthy behaviours. There is also little research on the religious coping mechanisms that are used by adolescents and whether race shapes coping mechanisms. Furthermore, in the New Public Health, health promotion research has moved from the studies on the association between diseases and their risk factors to the association between the psychosocial determinants (the root causes of the causes) of diseases and their risk factors (WHO, 2009).

Much research has been conducted on the role of peer pressure, socio-economic factors (Lawlor *et al.*, 2005) and demographic characteristics (Brenner & Collins, 1998) associated with unhealthy behaviours. Research finds that socioeconomic factors (education and household income) and peer pressure alone do not fully explain health related behaviours and the inequalities in oral/general health in most adolescent populations (Sabbah *et al.*, 2009).

The present study did not focus much on marital status even though research identifies that being a single parent and/or divorce has substantial negative effects on adolescents' well-being (Amato, 1993; Kelly & Emery, 2003). This is because in South Africa, women head nearly half of all the households (Medical Research Council, 2007). This is common all over Africa and is not uncommon in the rest of the world. Single parents must be given the necessary tools to raise their adolescents in healthy behaviours. Single parenthood could be by choice or from death or marital conflicts which may have been unavoidable. Moreover, adolescents from intact families whose parents lack the appropriate skills in parenting may also engage in health compromising behaviours. Marital status as well as socio-economic status or positioning should therefore not be a hindrance or yardstick in the nurturing of adolescents in health enhancing behaviours. Every parent/caregiver should be empowered with the necessary skills and strategies that are effective in their circumstances to create the enabling environment for their adolescents to develop healthy behaviours. Furthermore, apart from the associated poor oral health, adolescent unhealthy behaviours may have serious general health implications such as obesity, diabetes and cardiovascular disease (Okagbare & Ayo-Yusuf, 2012).

The role of adolescent's self-esteem, self-efficacy (Fang *et al.*, 2011), religiosity, sense of coherence (SOC) and mastery over relative economic and social positioning among others are important in resisting negative peer pressure (Gardner & Steinberg, 2008) and may provide further explanations for the observed oral/general health inequalities and health related behaviours. The aforementioned factors appear to be linked to parental perception of these factors as they relate to their adolescents' oral health (Talekar *et al.*, 2005). It is imperative therefore, to explore parents' perception of the psychosocial factors that are associated with these health compromising behaviours.

To the best of the researcher's knowledge, this is the first study to explore parents' perception of the psychosocial factors associated with health compromising behaviours related to oral health among adolescents in South Africa.

### **1.3 Potential benefits of the study**

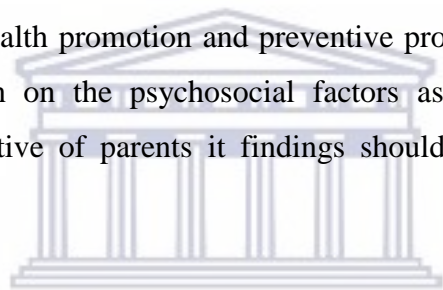
It was anticipated that the present study would provide an opportunity to generate new knowledge and improve the understanding of pathways to oral health inequalities among adolescents through the investigation of parents' perception of the psychosocial factors associated with a wide range of health related behaviours viz. alcohol consumption, smoking, inadequate consumption of fruit and non-starchy vegetables, inappropriate consumption of refined sugars and inadequate/infrequent tooth brushing among adolescents in South Africa. In addition, it was anticipated that the findings from the present study will provide a scientific evidence-base to inform the planning of priority public health programmes and improve parental participation in the prevention and control of health compromising behaviours and subsequently improve the general/oral health-related quality of life of South Africans. This is because the most relevant childhood experience related to the adult SOC is participation in shaping outcomes which is greatly influenced by parental perceptions (Sagy & Antonovsky, 2000; Talekar *et al.*, 2005).

Programmes to prevent health compromising behaviours and promote health depend on a sound knowledge of their determinants. Our understanding therefore, of parents' perception of the psychosocial factors association with health compromising behaviours among adolescents in South Africa, with its oral and general health implications is very important because parents are key role players and role models. The findings will further highlight the role of specific psychosocial factors in the development of health related behaviours and provide scientific evidence that may lead to the development of health promotion strategies, targeted interventions that are appropriate and effective from the perspective of parents.

Public health benefits may be derived from the implementation of the recommendations based on this study, especially if they are incorporated or included in efforts by health promoters and policy makers in government/non-governmental organizations to develop community-based and population-based intervention programmes and strategies for the prevention and control of

unhealthy lifestyles and associated burden of chronic diseases especially with the cooperation of parents. These interventions should benefit individuals and government in terms of cost and compromised oral and general health-related quality of life of the adolescent. Specifically, the study highlights areas of adolescent health needs in South Africa, essential for the development of evidence-based policy and practice. It essentially, aimed to gain new insight into, and increase understanding of parental perception of health behaviours, lifestyles and their context in adolescence. The process of the interviews also exposed and sensitized participants to a better understanding of their vital role as parents/caregivers in the prevention of health compromising behaviours among their children and household.

Furthermore, the findings of this study, even though it cannot be fully generalised, have the potential to contribute not only to South African national health priorities but also to the health priorities of the African continent in general, especially in the area of enhancing parental participation in adolescent health promotion and preventive programmes. Apart from this study providing useful information on the psychosocial factors associated with these behaviours especially, from the perspective of parents its findings should also form the basis for future research.



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## CHAPTER 2

### LITERATURE REVIEW

#### 2.0 Introduction

The purpose of this chapter is to provide a review of extant literature related to adolescent unhealthy behaviours and the current parameters of the conversation in this subject area in order to identify or reveal the gaps in knowledge and engage the present study to address some aspects via its contribution.

#### 2.1 Family life, structure and communication

Even though the composition of the family unit has undergone considerable change in recent decades due to a variety of socio-economic developments, it remains the first learning environment for the child (Fostera *et al.*, 2005). It is therefore vital for the healthy development of the adolescent – emotionally, physically, and socially (Lerner *et al.*, 1995). The influence of the family continues throughout adolescence and indeed throughout the life-course of the individual to varying degrees. Parents are powerful role models and influence (Coleman & Hendry, 1990; Bryant & Zimmerman, 2003). Their subjective perception of the psychosocial factors associated with health compromising behaviours is critical in the quality of parental participation in the prevention and control of these behaviours (Talekar *et al.*, 2005; Poutanen *et al.*, 2007).

Family or home environment is likely also to have an impact on adolescents' self-perception about their general/oral health (Locker *et al.*, 2002). Parental habits, whether positive or negative, can influence the development of such habits in their children. For example, parents who indulge in excessive alcohol consumption, smoking and drug use are more likely to raise children who smoke, use alcohol and drugs (Morojele *et al.*, 2001) with increased odds of multiple health compromising behaviours (Alamian & Paradis, 2009).

Conversely, parents who are religiously active are more likely to influence their adolescents religiously and conceivably away from alcohol use, smoking and substance use (Williams & Bonner, 2006). The immediate family and even the extended family provide the context within which many health risk and health enhancing behaviours are initiated and retained into adulthood (Currie *et al.*, 2004). Association between family structure and adolescent health reveals more favourable outcomes for children living with both parents compared to step- and single- parent families (Griesbach, Amos & Curry, 2003; Todd *et al.*, 2007). Single parents have to work more to support their children because of strong associations between poverty and family structure (Musick & Mare, 2006). Thus, they have less time for joint activities with their adolescents.

More importantly, a positive parent-child relation serves a protective function, helping the child towards positive health outcomes (Barrett & Turner, 2006). Adolescents who have good communication with their parents/guardians experience fewer behavioural problems and are less likely to undertake risky behaviours (Currie *et al.*, 2004). Ease of communication between adolescents and parents/guardians is enhanced by the quality of joint family activities, including family mealtimes (Fiese, 2006). While many studies identify family conflict as having negative effects on children's health outcomes and a key predictor of poor psychological well-being and behavioural problems among adolescents (Gryncz & Fincham, 1990; Amato & Keith, 1991), joint family activities are the most important indicators of a functional family. Adolescence is typically a period of diminishing parental influence as adolescents spend more time at school and/or with their peers (Myers, 2000; Mestdag, 2005) and there is a strong association between lack of parental monitoring of peer affiliation of their adolescents and acquisition of health compromising behaviours (Currie *et al.*, 2004).

Divorce contributes not only to the high prevalence of single parents with the attendant difficulties but also has substantial effects on adolescents' well-being (Amato, 1993; Kelly & Emery, 2003). It often results in many changes in adolescents' living situations such as changing schools, homes, etc. Adolescents often also have to make adjustments to changes in relationships with friends and extended family members. These changes create a more stressful environment for them. In addition, poor parental adjustment in parents undergoing the process of divorce or who are already divorced negatively affects adolescents' well-being. There have been many studies examining the relationship between divorced parents' psychological well-being and adolescents' well-being.

Amato and Keith (1991) report a positive relationship between the mental health of parents and adolescents' mental health. Adolescents, whose parents are better adjusted, fare better than adolescents whose parents are not adjusting well.

Diminished parenting practices are observed in many parents prior to, during and immediately following divorce which appears to contribute to some of the problems that adolescents experience. Amato and Keith (1991) also assert that when the divorced parent's adjustment is taken into account some of the differences between adolescents from married and divorced parents disappear. However, the causal relationship between parents' and adolescents' adjustment is not clear. It could be that having better adjusted adolescents improved the well-being of their parents.

Conflict, which is frequently part of family life, may be especially common in families that are or have undergone divorce. Adolescents in those families that can cooperate and reduce conflict fare better (Amato & Keith, 1991). Further emotional upheaval in the adolescent often accompanies re-partnering of divorced parents. There are often parent-child conflicts as well as prejudices in relationships with step-parents, -brothers, -sisters etc. in a blended family.

## **2.2 Socioeconomic status (SES) of parents/guardians on health behaviours**

Some research suggests that it is not the family structure *per se* that is important, but the complex family processes and interactions between family members (Houseknecht & Hango, 2006) as well as SES of parents/guardians that influence the health and well-being of adolescents (Spencer, 2005; Levin *et al.*, 2007; Currie, Liven & Todd, 2008). Parental occupation and family affluence are associated with a range of adolescent health outcomes - positive and negative. Positive health outcomes such as high life satisfaction, physical and recreational activities, healthy eating habits and preventive dental care are more likely to be associated with children from affluent families, so also are negative health outcomes such as drug use, sedentary lifestyle and obesity (Holstein *et al.*, 2004). Nonetheless, an adolescent who grows up in a low SES family has a relatively higher risk for unhealthy behaviours compared to an adolescent from a higher SES (Huurre, Aro & Rahkonen, 2003). Consumption of fruit/vegetables among adolescents is a healthy behaviour consistently related to higher parental SES (Friestad & Klepp, 2006).

The health behaviours of adolescents are affected by unmeasured environmental factors of their neighbourhood (Case *et al.*, 2002). Adolescents who live in low-SES neighbourhood seem to enjoy the protective effect of family high SES on the negative health consequences of living in such neighborhoods. This may be partly due to greater health awareness and positive health behaviours among the families of higher educated parents (Wilson *et al.*, 2000).

However, socioeconomic factors (education and household income) alone do not fully explain oral health behaviours and disparities (Sabbah *et al.*, 2009). The adolescent's self-esteem, self-efficacy (Fang *et al.*, 2011), religiosity, SOC and mastery over relative economic and social positioning among other psychosocial factors are important in resisting negative peer pressure (Gardner & Steinberg, 2008). Peers influence behaviours in at least four different types of relationships. These relationships are dyadic friendships, romantic relationships, peer group interactions and the broader peer culture. They offer opportunities for the development of certain health behaviours or the adolescent become unpopular, neglected or rejected by peers (Kupersmidt & Dodge, 2004).

### **2.3 The school environment**

The school plays a significant role in the shaping of the self-perception and ultimately the health behaviour of the adolescent. School connectedness appears to be a strong protective factor among adolescents (Blum *et al.*, 2003). Positive classroom management climates, participation in extracurricular activities, firm but moderate disciplinary policies and small school size are positively associated with higher school connectedness (McNeely, Nonnemaker & Blum, 2002). Because of the powerful influence of school connectedness, Maharaj, Nunes and Renwick (2009) suggest the need for a review and remodeling of school education programmes to include promotion of health.

Rovner *et al.* (2011), indicate that the availability of fruits and vegetables in the school environment is positively associated with the consumption of these foods by younger learners. A Minnesota study however, indicates that snack vending machines availability in schools are associated with a decrease in the consumption of fruits among seventh graders (Kubik *et al.*, 2003).

The association between availability and consumption was even stronger for chocolates and other candies but not significantly associated with older learners (grades 9-10). Learning is not limited to the influence of educators; the effect of peer selection and socialization is strong at school (Samdal *et al.*, 1998; Torsheim & Wold, 2001). An adolescent is exposed at school to many other adolescents from different backgrounds and upbringing. The period following the transition to high school is a particularly vulnerable time during which ‘at risk’ adolescents may become progressively disengaged from school while at the same time experiencing reduced parental supervision at home (Department of Health & Drug Scope, 2001b).

#### **2.4 Peers/friends’ influences**

Friends and peers can have positive and negative effects on adolescents’ health behaviours (Berndt, 1992). On the positive side, socialization among adolescents is vital for development of social skills as well as the propensity to cope with stressful situations. These protective factors are needed for the emotional well-being of adolescents (Martin & Huebner, 2007). On the negative side, friends’ and peers’ influences may also lead to antisocial and multiple health compromising behaviours (Alamian & Paradis, 2009).

When adolescents come together they socialize depending on peer selection, around health enhancing behaviours such as physical activities (Currie *et al.*, 2004) and health compromising behaviours such as substance use. Substance use among adolescents may be due to selection or socialization or interaction of both (Fisher & Bauman, 1998). In brief, selection, seeking out peers with similar behaviours occurs when adolescents develop or retain friends based on similarity of beliefs, attitudes and behaviour but this not entirely responsible for peer association (Haynie, 2002). On the other hand, socialization takes place when adolescents adjust their beliefs, attitudes and behaviour to conform to those of their peers. Socialization may be indirect and subtle in the form of adolescent perception of norms, expectations, social acceptance and status associated with a particular behaviour. It may also be overt in the form of actual discouragement or encouragement of a particular behaviour. However, critics of socialization argue that the observed peer-related behaviours are not due to peer influence. Rather, they are due to self-selection into peer networks based on prior behavioural dispositions (Haynie, 2002).

Selection and socialization may operate reciprocally. Adolescents may select friends because of their similar beliefs and behaviour while the friends may exert influence on their behaviour (Dishion *et al.*, 1995). Regardless of how the adolescent enters a network, the adolescent is exposed to both health compromising and health enhancing behaviours and the ratio of these patterns influences their own health behaviour. Therefore, the quality and quantity of peer social networks during time spent together without supervision are crucial in the development and progression of health behaviours. Associating with peers who abuse substances makes their use seem normal and reinforces their use as well (Oetting & Beauvais, 1986; Dishion *et al.*, 1995). Spending time with peers in the evenings significantly increases the odds of adolescents' involvement in risky behaviours such as substance use (Settertobulte & Matos, 2004).

## 2.5 Gender

Considerable gender differences can be found with regards to health-related behaviours among adolescents. For example, adolescent boys tend to be more involved in health-risk behaviours such as alcohol and cannabis consumption and less involved in health-protective behaviours such as fruit and vegetables consumption than adolescent girls who are on the other hand, are significantly less involved in physical activities and fights (Hardy *et al.*, 2006; Currie *et al.*, 2012). Furthermore, adolescent girls are more susceptible to low-parental monitoring (Rose *et al.*, 2001). Currie *et al.* (2012) also reports that adolescent girls are more likely to skip breakfast more frequently and are more likely to be on diets to control their weight. Furthermore, they are consistently more likely to report that they brush their teeth more than once a day. While previous Health Behaviour in School-Aged Children (HBSC) surveys report that girls in some western European countries and Canada smoked more, no gender differences are now evident as gender differences in smoking seem to be changing (Currie *et al.*, 2012).

The gender structure of friendship also moderates peer influence (Danielle *et al.*, 2007). Having opposite-sex friendships is suggested to increase the risk of alcohol use in both adolescent boys and girls. This may be attributed to the tendency of adolescents in the company of opposite-sex friends to be more disinhibited and sensation-seeking in their bid to impress their opposite-sex members (Dick *et al.*, 2007). It is conceivable that adolescents who spend time with opposite-sex friends are already engaging in non-normative and more precocious behaviours. Consequently, these associations may increase the tendency of engagements in more adult-like behaviours such as alcohol use and smoking.

Data from a National Longitudinal Study of Adolescent Health, suggest adolescents in same-sex best friendships influence each other mutually. However, adolescent boys in mixed-sex best friends' relationship have a greater influence over their female friends' drinking pattern than vice versa (Gaughan, 2006).

Gender-specific effects in peer influences are also observed in the Teenage Attitudes and Practices Surveys. In one study, the odds for adolescent boys substance use associated with having best friends who engage in substance use is lower compared to that for female best friends (Wang *et al.*, 1995). While a number of studies document gender differences in the prevalence of alcohol use (Cardenal & Adell, 2000; Kokkevi *et al.*, 2007), little research has been focused on examining gender differences in risk factors associated with alcohol use.

However, puberty is one risk factor that has been associated with substance use in adolescent girls. Adolescent girls who mature earlier than their peers are more likely to engage in substance use (Dick *et al.*, 2000) and it is suggested this may be mediated partly through association with older peers and male friends. Substance (smoking, alcohol and illicit drug) use share some common underlying determinants (Beyers *et al.*, 2004) and there is evidence that these risk behaviours sometimes cluster together (Wiefferink *et al.*, 2006). For this reason there are proposals for intervention programmes to take a broader approach to address multiple problems, rather than target single risk behaviours (Bonnell, Fletcher & McCambridge, 2007).

## **2.6 Determinants of alcohol use**

Globally, alcohol consumption seems to be on the rise among adolescents especially, with the introduction of alcoholic carbonate drinks, better known as 'alcopops' (WHO, 2008). Alcohol use is known to cluster with combined multiple substances (such as tobacco and cannabis) and other high risk behaviours such as truancy, underachievement, unprotected sex, accidents, injuries and alcohol-related deaths (Wechster *et al.*, 1994; Corbett *et al.*, 2005; Advisory Council on the misuse of Drugs, 2006). In addition, binge drinking (consuming more than 5 drinks in a row) among adolescents is more likely to lead subsequently to alcohol-dependent adults (Viner and Taylor, 2007). South Africa is reported to have one of the highest levels of alcohol consumption per drinker in the world. Binge drinking is associated with about 15% of 12-13 year olds and 22% of those aged 15-16 years (Medical Research Council, 2002).

In the 2<sup>nd</sup> South African National Youth Risk Behaviour Survey of 2008 adolescent learners who have ever used alcohol were found to be 49.6% nationally. With regard to age of initiation into alcohol use, 11.9% of adolescent learners report having had their first drink before the age of thirteen years. Significantly higher percentages of White adolescent learners (75.9%) and Coloured learners (67.0%) have used alcohol, when compared with African Black adolescent learners (45.5%). In this 2008 survey, male adolescent learners generally have significantly higher rates of alcohol consumption than female adolescent learners in all of the measures of alcohol use except among the Coloured adolescent learners. Female Coloured adolescent learners have higher rates of all the measures of alcohol consumption except for the age of initiation. There are also provincial variations in alcohol consumption among adolescent learners with the Gauteng Province reporting a high rate of 65.1% (Reddy *et al.*, 2010). Adolescents in UK have one of the highest levels of alcohol use, binge drinking and getting drunk. When compared to females the prevalence of alcohol use was generally, higher among male adolescents and considerably higher with regards to binge drinking (Alcohol Concern, 2002).

## **2.7 Determinants of smoking**

Early initiation to smoking is linked to a greater risk of addiction (Health Sponsorship Council, 2005) and development of chronic disease such as respiratory, cardiovascular and periodontal diseases (Crawford *et al.*, 2012). Generally, most adult smokers started experimenting with cigarettes or began smoking as adolescents (Centres for Disease Control and Prevention, 1994). In one study in Britain, about 40% of 12 to 13 year olds and about 60% of 14 to 15 year olds have tried a cigarette (HEA Schools Health Education Unit, 2003). In the second South African National Youth Risk Behaviour Survey conducted 2008, the national average of adolescent learners who have tried a cigarette is 29.5% (almost one in three learners) with significantly more male than females. One in five adolescent smokers (21.0%), were current smokers. Of the current smokers, 45.5% had tried to stop smoking in the year preceding the survey. It is important to note here that nationally, significantly more current smokers (42.5%) than never smokers (23.2%) had one or more parent/guardian who smokes. Furthermore, there was a racial variation with Coloured having the highest prevalence, followed by the White and Indian learners with the Blacks having the lowest prevalence of learners who have ever smoked.



There was also a provincial disparity with significantly high percentage of adolescent learners in Gauteng Province (40.5%) who have ever smoke cigarettes (Reddy *et al.*, 2010). In addition, the age of initiation in this survey is less than 10 years nationally, with male adolescent learners almost twice as likely as female learners to have smoked their first cigarette before the age of ten years. The prevalence of smoking among parents of learners who were current smokers was 42.5% and 23.2% among parents of learners who have never smoked (Reddy *et al.*, 2010). General, social and development factors such as family structure, parent-child communication, parental smoking, school experience and local area deprivation are strongly associated with smoking among adolescents (Currie *et al.*, 2004; Corbett *et al.*, 2005). There is a positive association between cigarette use and alcohol/cannabis (dagga) use (Duncan, Duncan & Hops, 1998). Smoking behaviour is described as a gateway to other drugs use because smokers are three times more likely to drink alcohol and about 10- to- 30 times more likely to use illicit drug than non-smoker (Torabi, Bailey & Majd-Jabbari, 1993).

## **2.8 Determinants of cannabis (dagga) use**

Although the use of cannabis is illegal, it is the most widely used among adolescents after alcohol and tobacco (BMRB Social Research, 2007). Factors linked to cannabis use include family structure, parental supervision, truancy and drug use by older siblings (Advisory Council on the misuse of Drugs, 2006). Nationally, 12.7% of adolescent learners report having used dagga in the 2<sup>nd</sup> South African National Youth Risk Behaviour Survey. With regards to the age of initiation, 5.2% of adolescent learners had used dagga for the first time at 13 years or younger. Male adolescent learners report a higher prevalence than female adolescent learners for ever use and current use of dagga with Coloured learners having higher prevalence in all measures of dagga use (Reddy *et al.*, 2010).

## **2.9 Determinants of substance use**

The influence of parenting practices and the effect of peer pressure on adolescent substance use have been the focus of numerous studies (Chassen *et al.*, 1986; Bray *et al.*, 2003). Several studies identify mediators of parenting influences to include peer influence and outcome expectancy (Dielman, Butchart & Shope, 1993; Sieving *et al.*, 2000). Conceivably, parents/guardians would naturally monitor and influence both substance use and peer affiliation. Parental disapproval is

found to protect against adolescent substance use and progression. This is especially so, if positive parenting practices are maintained over time, beyond early adolescence. In one study, lack of mediation by substance-using peers of the effect of parental monitoring on substance use among late adolescents was reported (Steinberg, Fletcher, & Darling 1994). It could be that the relative influence of parents on substance use and friendship development tends to be greater among early than late adolescents (Simons-Morton, 2007). Moreover, the use of illicit substances, and likelihood of having been offered drugs, is significantly related to age (Blenkinsop, Boreham & Shaw, 2002). Adolescent substance use is reported to peak at age 15 (Sutherland & Shepherd, 2001). In comparison, parenting influences on substance use are less well studied than peer influences. Most of the studies that have examined both peer and parenting influences identify peer influences to be substantially more important (Hawkins, Catalano & Miller, 1992). Positive relationship between adolescent and peer substance use are well documented with respect to alcohol use (Bray *et al.*, 2003) and cigarette smoking (Conrad, Flay & Hill 1992; Tyus & Pederson, 1998).

Although experimentation with substances cuts across the social spectrum during the period of adolescence, problematic pattern of substance use are more often concentrated among those who are worse-off (Department of Health & DrugScope, 2001a). A study in Europe reports that quality of family life is a more robust barrier to adolescent substance use than living with both parents, especially when the adolescent is positively attached to the mother (MacArdle *et al.*, 2002). Notwithstanding, coming from a non-intact family, increases adolescent vulnerability to peer pressure and is a risk factor for substance use (West & Sweeting, 2002a).

Simons-Morton's (2007) findings on substance use among adolescents are consistent with the findings of many other cross-sectional and prospective studies (Chassen *et al.*, 1986; Duncan & Duncan, 1996) with regards to selection and socialization effects among peers, although the relative contributions of selection and socialization to adolescent substance use have remained inconclusive (Kiesner & Kerr, 2004). For example, Curran *et al.* (1997) and Bray *et al.* (2003) report effects of both selection and socialization on drinking progression among early adolescents, while another study by Farrell & Danish (1993) reports the effect of selection instead of socialization. This inconclusiveness may be due to the fact that adolescents are not equally susceptible to peer influences and conversely, peers are not equally influential.

Recreational drug use (the use of psychoactive substances ‘to have’ fun) has also become increasingly common among adolescents. Stimulants such as cocaine and amphetamines are frequently used (Advisory Council on the misuse of Drugs, 2006). Hallucinogenic drugs and plants, sedatives, hypnotic drugs, and tranquillisers are sometimes used in combinations with recreational drugs (Advisory Council on the misuse of Drugs, 2006). All these substances negatively affect, in no small way, the general well-being of the adolescent.

## **2.10 Determinants of eating habits**

Eating habits formed during childhood and adolescence are likely to track into adulthood with their health implications (MacPherson Montgomery & Nichaman, 1995; Gillman *et al.*, 2000). Peer influences, available food types, affordability, advertising and taste preferences become the main considerations (Levin *et al.*, 2009). Modern economy provides a perverse incentive to eat the wrong foods especially, fast-foods outside the home. In general, the cheapest foods are high in fat and sugar. These foods high in fat and sugar are cheaper per unit energy when compared with foods rich in protective nutrients such as fruits and vegetables (James *et al.*, 1997) hence social support correlates positively with fruit/vegetable intake (Watt & Sheiham, 1996).

The most important predictor of fruit and vegetable consumption is suggested to be gender (Friel, Newell & Kelleher, 2005), and this difference is evident in children as young as four years of age (Wardle *et al.*, 2001). A Norwegian study involving adolescents, boys were identified to eat less fruit and vegetables than the girls because they like them less. However, the reasons for this are yet to be identified (Bere, Brug & Klepp, 2008). South African adolescents consume relatively low fruit and vegetables in spite of the development of food-based dietary guidelines (Vorster, Love & Browner, 2001).

There is an increased consumption of soft drinks and sweets among adolescents in preference to the more nutritional advantageous meals of fruits and vegetables (Currie *et al.*, 2004) with implications for caries formation. In South Africa, 50.3% of adolescent learners drink sweet cool drinks and 42.6% eat cakes and/or biscuits often with no significant variation in gender (Reddy *et al.*, 2010). These unhealthy diets in combination with sedentary lifestyles (such as driving, television viewing and computer use), contribute to the growing prevalence of adolescent obesity.

## 2.11 Educational aspiration

Adolescents' educational aspiration indicates relationships in the direction of more health-enhancing and less health-compromising behaviours among those planning higher education (Friestad & Klepp, 2006). Low educational aspiration is associated with health compromising behaviours such as inadequate/infrequent toothbrushing (Koivusilta *et al.*, 2003). This association may be explained by one's ability and motivation to work hard to attain goals including higher education or healthier body.

Adolescents from single-parent families are more likely to report lower educational aspirations than those from two-parent families (Garg, Melanson & Levin, 2007). Additionally, the higher the education of the parents, the more prevalent further educational aspirations observed among adolescents (Geckova *et al.*, 2010). This observation may be due to the creation of environments stimulating higher educational aspirations, offering the stimuli needed for the development of educational capacity by the parents. A greater impact of a mother's education in comparison with a father's education is however, reported in a study by Zuckerman (1981). Geckova *et al.* (2010) also, indicate that strengthening adolescents' SOC might increase their educational aspirations. Frequently, low academic achievement and poor school perception are associated with physical fighting (Laufer & Harel, 2003) and substance use (Kuntsche & Gmel, 2004).

## 2.12 Health locus of control

Health locus of control refers to the degree of control that people believe they possess over their personal health. More generally, locus of control measures indicate the degree of control (internal or external) an individual has over a particular life situation. People reflecting an internal locus of control believe that they can exert control over their environment to bring about desirable changes. Consequently, those possessing an internal health locus of control believe that their personal health-related outcomes are for the most part determined by their own choices and behaviours. Conversely, people with an external health locus of control believe that larger social forces, powerful persons or groups, or plain luck will determine their fate or health issues. Accordingly, those displaying an external health locus of control consider their personal health-related outcomes largely a matter of influences extending beyond their own control (Cockerham & Ritchey, 1997; McGuigan, 1999).

A possible application of these beliefs is in taking care of one's health. Lau (1982) divides practiced health behaviours along two categories. Certain health behaviours involve self-care, such as brushing one's teeth, eating healthy foods and getting exercises. On the other hand, are health behaviours which involve utilizing the services of dental and medical professionals. McGregor *et al.* (1997) demonstrate a significant association between health locus of control and toothbrushing behaviours as well as dental attendance in 12-16 year old English secondary school students, whereas, Koerber *et al.* (2006) find no significant association between toothbrushing frequency and health locus of control in 5<sup>th</sup> grade low income, African-American, at-risk children. Nevertheless, it is suggested that practicing a variety of different positive health behaviours as an adolescent is associated in later life with optimistic beliefs in the controllability of health, whether for beliefs in the efficacy of self-help or doctors. Conversely, the tendency to adopt a pessimistic explanation of life events is associated with poor health in later life (Peterson, Seligman & Vaillant, 1988).

### **2.13 The influence of religiosity**

Religiosity is part of a broader concept of spirituality although it is often referred by literature as being synonymous with spirituality. Research suggests that most religions have spiritual coping strategies, involving relationship with self, others, nature, ultimate other or God that are found to help individuals to cope with their health situations (Koenig, Larson & Larson, 2001; Koenig, McCullough & Larson, 2001; Tepper *et al.*, 2001; Fitchett, *et al.*, 2004; Ano & Vasconcelles, 2005). This may be because of finding meaning, purpose and hope from a higher power or God as opposed to a self-directed coping style, characterized by active participation of the individual in problem solving without acknowledging a higher power or God (Wong-McDonald & Gorsuch, 2000). Some Caribbean studies identify absence of religious involvement or a lack of religious belief as a risk factor for substance use (Smart & Patterson, 1990; Singh & Mustapha, 1994).

Many health compromising behaviours are directly addressed in many religious moral codes. These religious moral codes are opposed to the negative life styles (smoking, alcohol consumption, substance abuse, poor diet,) that are at the same time health risks and health compromising (Donahue & Benson 1995). There are differences, although, among religious groups in the emphasis placed on drug use (Lorch & Hughes, 1988).

It is conceivable that those who describe themselves as being religious feel greater than-average pressure to demonstrate more "socially desirable" characteristics in these areas (Donahue & Benson 1995). Hence, research investigating the relationship between religious commitment and drug use consistently indicates that adolescents who are seriously involved in religion are more likely to abstain from drug use than those who are not. Moreover, among users, religious adolescents are less likely than non-religious adolescents to use drugs heavily (Lorch & Hughes, 1985; Gorsuch, 1988; Payne *et al.*, 1991). In addition, Buddhism, Christianity, Islam and Judaism strongly emphasize cleanliness because of their belief that cleanliness is next to Godliness. The Islamic religion gives advice on oral hygiene. The use of the *miswak* (chewing stick) is frequently advocated in the *hadith* (the traditions relating to the life of Muhammad).

Wallace and Williams' socialization influence model (1997) specifies a number of possible mechanisms through which religious commitment might operate to influence adolescent drug use. The model postulates that health-compromising behaviours like drug use are the result of a dynamic socialization process that begins in childhood and extends throughout the course of life. According to the model, the family is the primary and first socialization influence, and a continuing source of socialization into the norms and values of the larger society. The model hypothesizes that religion, peer networks, and other contexts in which adolescents find themselves (e.g., schools) operate as key secondary socialization influences that impact drug use. Therefore, in addition to the direct teachings associated with attendance at religious services, adolescents raised in religious traditions are likely to be exposed to parents and other relatives who follow such teachings. Thus, part of the explanation for less drug use among religiously involved adolescents may be that their families reinforce the religious structures against drug use and abuse. A further factor may simply be availability. Religious parents who do not drink, smoke, or use drugs are less likely to have these substances in their homes, thus reducing the opportunity for adolescents to experiment with them (Jessor & Jessor, 1977).

Peer group factors also operate in the influence of religiosity on adolescents' health behaviours. The dynamics operating within the family probably have their parallel in broader social contacts. Those who are strongly committed to religion are more likely to associate with others holding similar views. Thus, the strongly religious are less likely to belong to peer groups that encourage experimentation with cigarettes, alcohol, and other drugs and more likely to participate in peer networks and activities that do not involve drugs.

Given the strong relationship between drug use by peers and an adolescent's own drug use, the norms of the peer group are especially important as predictors of whether a particular adolescent will start using drugs (Jessor & Jessor, 1977). There appears too, a gender difference in coping styles. Research indicates that males are more likely to be socialized to be independent and females are more likely to be socialized to be interdependent. Females are significantly more likely than males to use a collaborative religious coping style and are more actively involved in church. A collaborative coping style is characterized by a cooperative relationship with a higher power or God in which the individual is in an active partnership with a higher power or God to solve problems. On the other hand, males are significantly more likely than females to use a self-directed religious coping style (Leman, Ahmed & Ozarow, 2005).

In general, religiosity, especially subjective religiosity is inversely correlated with health-compromising behaviours and positively associated with health enhancing behaviours (Oleckno & Blaconiere, 1991; Donahue & Benson, 1995). Subjective religiosity refers to perceptions and attitudes regarding religion, such as perceived importance of religion, the role of religious beliefs in daily life, and individual perceptions of being religious (Chatters, Levin & Taylor, 1992). Although religious behaviours generally decline during adolescence, subjective religiousness is still widespread among adolescents (Gallup & Bezilla, 1992).

#### **2.14 The influence of individual self-efficacy**

According to Bandura (1995) self-efficacy is “the belief in one’s capabilities to organize and execute the courses of action required to manage prospective situations”. In other words, self-efficacy is a person’s belief in his or her ability to succeed in a particular situation. Bandura (1994) describes these beliefs as determinants of how people think, behave, and feel. Such beliefs produce diverse effects through four major processes. These include cognitive, motivational, affective and selection processes (Bandura, 1997).

While some studies relate the concept of self-efficacy to general and oral health behaviours (Syrjala, Knuuttila & Syrjala, 2001; Pajares, 2002), Koerber *et al.* (2006) indicate self-efficacy to be only a marginal predictor of toothbrushing behaviour among low-income, African-American, at-risk grade 5 children.

## 2.15 The influence of individual self-esteem

Self-esteem or self-worth is one of the three components of self-concept. The other two components are self-image and ideal self. Self-esteem is how one feels about oneself, self-image is about how one sees oneself and how the individual believes others see him or her while ideal self, is what you wish you were really like (Rogers, 1959). Self-esteem may be associated with oral hygiene behaviours. Adolescents with higher self-esteem are more likely to brush their teeth more regularly than those with lower self-esteem (Knecht *et al.*, 2001; Honkala, Honkala & Al-Sahli, 2007; Ayo-Yusuf & Booyens, 2011). Self-esteem is positively associated with toothbrushing frequency among 12-16 year old English secondary school children (Macgregor, Regis & Balding, 1997). Similarly, Koerber *et al.* (2006) reports self-esteem as a strong predictor of toothbrushing in low-income, African-American, at-risk grade five adolescents. Low self-esteem would cause an adolescent to give up brushing (Koerber *et al.*, 2006). However, Koerber and his colleagues find this association to be significant only among adolescent boys. Low self-esteem among adolescent boys would undermine their motivation to comply with social norms, which would, in turn, result in lower toothbrushing frequency. However, among adolescent girls, the incentive to conform to social norms is high regardless of self-esteem (Koerber *et al.*, 2006).

Furthermore, Kallestal *et al.* (2000) suggest that self-esteem is a crucial intervening variable between variables measuring social background and outcome variables, especially oral health behaviour among 12 year old Swedish adolescents. On the contrary, one longitudinal study reports no association between self-esteem and toothbrushing during adolescence (Kallestal *et al.*, 2006). Additionally, a study shows that self-esteem is positively associated with eating healthily, non-smoking, and low alcohol use (Wiefferink *et al.*, 2006). Alamian and Paradis (2009) also, asserts that adolescents with high self-esteem are less likely to have multiple behavioural risk factors.

In general, if there is a mismatch between one's self image and one's ideal self, this is likely to affect how much one values oneself. Also, if one has a poor opinion of oneself, that person's self-esteem will probably be low (Rogers, 1959).



## **2.16 Mastery over relative economic and social position**

The impacts of stressors on health and well-being are reduced when persons possess high levels of mastery or sense of control over relative economic and social position. A sense of control or mastery over life circumstances is a generalized belief that most circumstances in one's life are under one's personal control. It is a particularly efficacious stress-buffer: a people's coping resource. This resource augments individuals' abilities to cope with stressful demands and persons with low levels of it are more likely to experience poor health. Mastery encourages active attempts at problem-solving (Pearlin *et al.*, 1981; Turner & Roszell, 1994; Thoits, 1995).

## **2.17 The role of individual sense of coherence**

SOC is a psychosocial concept that encompasses a number of the psychological factors (Antonovsky, 1993) included in this review and it also relates to perceived social support (McSherry & Holm, 1994). It has its roots in the salutogenic paradigm postulated by Antonovsky (1979). He questioned the pathogenic paradigm for its shortcomings in explaining health and disease. While pathogenic orientation deals with the disease, its causes and diseased person, salutogenesis orientation on the other hand, focuses on the individual and the salutary factors that support human health and well-being that enable the individual cope well regardless of the type of the stressor.

Dubos (1987) supports the salutogenesis orientation and even refers to the pathologic orientation in the management of patients as “magic approach” and warns that this leads to “the mirage of health”; the fact that we will be permanently healthy if we devote enough resources to remove the cause of diseases. SOC is therefore, the ability to use salutary factors or general resistance resources (GRRs) for one's wellbeing and this ability is considered to be more important than the resources themselves. The GRRs are found in both the immediate and the distant environment of every person. These may include coping strategies, culture, experience, healthy lifestyles, knowledge, religion, self-esteem, social support, and even money (Antonovsky, 1993; Eriksson & Lindstrom, 2006). Those with internal health locus of control, compared to those with external health locus of control, are more likely to feel that they can manage their health and, in general, their life (Antonovsky, 1987).

This link between SOC and health locus of control can also be extended to other psychological factors influencing oral hygiene behaviours such as self-esteem and self-efficacy (Eriksson & Lindström 2006). SOC is assumed to be a comprehensive indicator of oral hygiene behaviours. Some studies report significant association between SOC and health behaviours such as alcohol consumption (Midanik *et al.*, 1992), dietary habits (Larssen & Setterlind, 1990), risk behaviours for HIV infection (Nyamathi, 1991), smoking (Glanz, Maskarinec & Carlin, 2005) and quality/frequency of toothbrushing (Ayo-Yusuf, Reddy & van den Borne, 2009).

Dorri *et al.* (2010) also, report SOC to be positively associated with toothbrushing frequency in Iranian adolescents in Mashhad, although, this does not fully explain observed sex difference in their toothbrushing behaviours. Indeed, SOC holds promise in oral health promotion and research. It has a main, a moderating and a mediating effect on health (Eriksson & Lindström 2006).

SOC consists of three components, namely comprehensibility (cognitive) which refers to the extent to which one perceives the stimuli that confront one as consistent, structured and clear; manageability (behavioural) which is the extent to which one perceives that the resources at one's disposal are adequate to meet life's demands; and meaningfulness (motivational) which refers to the extent to which one feels that life makes sense emotionally (Eriksson & Lindström, 2008). In general terms, the stronger a person's SOC, the more adequately that person is able to cope with stressors and maintain good health. This may be attributable to their ability to identify a greater variety of GRRs at their disposal and mobilize those resources, to promote effective problem solving and to resolve tension in a health-promoting manner (Antonovsky, 1993).

Antonovsky (1987) suggests that SOC develops throughout life. SOC is changeable through childhood and adolescence to the end of the third decade of life, when it is almost fully established (Antonovsky, 1987). Younger adolescents have weaker SOC than older adolescents (Ayo-Yusuf, Reddy & van den Borne, 2009). However, these changes in SOC over the life-course are not yet evidence based and some studies show contradictory results. Contrary to his assumption that SOC is fluctuant during adolescence (Antonovsky, 1987), Margalit and Eysenck (1990) report no significant age difference in SOC among Israeli adolescents. Similarly, Honkinen *et al.* (2008) assert that SOC of Finish adolescents do not significantly change between the ages of 15 and 19 and seems to be reasonably stabilized before the age of 15 years.

Ayo-Yusuf, Reddy & van den Borne (2009) report no sex difference in SOC scores among South African 8th grade adolescents. An Israeli study reports stronger SOC for adolescent girls compared to adolescent boys (Sagy & Antonovsky, 1986). Inconsistent with the Israeli study, another study on SOC in adolescents, reports higher levels of SOC for boys compared to girls in Sweden (Simonsson *et al.*, 2008). This inconsistency in sex difference in SOC among different populations may be partly explained by different socio-cultural backgrounds hence, there is need for further investigations in this regard.

### **2.18 Determinants of injuries**

Injuries replaced infections as the major cause of death among adolescents during the latter half of the 20<sup>th</sup> century in some parts of Europe and North America (Krug, Sharma & Lozano, 2000). The most common causes of injuries in adolescence include fighting, contact sports, and reckless driving (Molcho *et al.*, 2006). The greater involvement of adolescent boys in physical activities such as fighting tends to cluster with reckless driving and higher rates of medically attended injuries they report ((Porter & Lindberg, 2000). Furthermore, risk behaviours also characterized as externalizing behaviours, are more common in adolescent boys (Lipman, 2003). This observation could help to explain the strength of gender differences, some of which are mentioned in other sections of this literature review.

Consistent with international findings, almost one third (31.3%) of South African adolescent learners were reported in the 2<sup>nd</sup> South African National Youth Risk Behaviour Survey to have been involved in a physical fight with 1.5 times more males than females (Reddy *et al.*, 2010). In addition, poor school perception and low academic achievement (Laufer & Harel, 2003) as well as substance use (Kuntsche & Gmel, 2004) are often associated with physical fighting and injuries.

### **2.19 Determinants of physical activity, weight control behaviour and body image**

Adolescents who participate in regular physical activities are likely to enjoy enhanced physical, psychological and social well-being (Biddle, Sallis, & Cavill, 1998). Participation in physical activities tends to decrease with age especially among adolescent girls. The irregular and small amounts of physical activity among adolescents combined with increasing levels of obesity, is

now of global concern (Alexander, Currie & Todd, 2003; Inchley & Currie, 2005). While, expert opinion is divided on the primary causal factors, a recent WHO report indicates that obesogenic environments appear to target the adolescent market making healthy choices difficult for them (WHO, 2003). The term obesogenic environments is used to describe modern environments which encourage and promote high energy intake and inactivity to distinguish between environmental and genetic causes of obesity (Gibson & Edmunds, 2002).

Adolescents become increasingly body conscious as they move through puberty. As a result of this, many adolescent girls adopt weight-reduction strategies, especially dieting as they begin to enjoy greater freedom with choice of food and feeding habits. Adolescent boys on the other hand, tend to be involved in physical exercises to increase their muscle mass and tone (McCabe & Ricciardelli, 2001). Body image especially amongst adolescent girls plays an important role in the shaping of self-perceptions, mental health and psychological well-being (Donnelly, 2006). Adolescent self-perception of body image results from a multiple of factors which are mostly subjective (self-defined). It is influenced by favourable feedback and acceptance from their family and peers about their body shape/size (Barker & Galambos, 2003). Also, media pressure through advertisements, presentation of models and celebrities in so-called ideal body images, act as risk factors for self-perceived poor body image (McCabe, Ricciardelli & Finernore, 2002). However, involvement in sports is associated with a better body image (Ferron *et al.*, 1999).

In addition to the health consequences overweight/obesity (Salvi, *et al.*, 1997; Grossi & Ho, 2000), studies suggest that overweight/obesity may compromise mental well-being as those who are overweight tend to suffer from lower self-esteem and negative self-image (NHS Centre, 2002). A study reports that adolescent boys have a higher positive self-esteem, lower negative self-image and less unhappiness than adolescent girls (Bergman & Scott, 2001). In general, adolescents are happier and more confident when they feel satisfied with their appearances (looks) (King *et al.*, 1996). A feeling of unattractiveness is linked to depression among adolescents (West & Sweeting, 2002b). South Africa has a high prevalence of overweight adolescents in both urban and rural areas (Kruger *et al.*, 2005). Nationally, 19.7% of adolescent learners were found to be overweight in the 2<sup>nd</sup> South African National Youth Risk Behaviour Survey of 2008 with significantly more females than males, whereas, only 12.1% considered themselves to be overweight (Reddy *et al.*, 2010).

This supports the findings of Le Marchand, Yoshizawa and Nomura (1988) that indicate a general tendency towards underestimation of body weight.

## **2.20 Determinants of general well-being**

School and learning experiences (Inchley *et al.*, 2007), friendship and peer relations (Currie *et al.*, 2004), family status and relations (Levin *et al.*, 2007) contribute immensely to the overall well-being of adolescents. Sound emotional, mental, physical and spiritual well-being enables adolescents to deal with life challenges and ease the transition through adolescence (Petersen *et al.*, 1997). The overall well-being of the individual in adolescence may persist into adulthood (Roza *et al.*, 2003). It is a predictor of risk behaviours such as smoking (Dierker *et al.*, 2007), excessive alcohol consumption (Verdurmen *et al.*, 2005), unhealthy eating habits (Beato-Fernandez *et al.*, 2004) and violent tendencies (Craig & Harel, 2004). The 2008 South African National Youth Risk Behaviour Survey reports one in four adolescent learners (23.6%) had felt so sad or hopeless that they stopped doing some usual activities for two weeks or more in a row prior to the survey. The survey also reports that one in five adolescent learners (20.7%) had considered attempting suicide, 16.8% had actually made plans to commit suicide while 21.4% had attempted suicide on one or more occasions in the six months preceding the survey ( Reddy *et al.*, 2010).

## **2.21 Determinants of Oral health**

All the determinants or factors reviewed above have serious implications for oral health. Oral health is more than just the absence of oral diseases. Poor oral hygiene which results from the inappropriate consumption of refined sugars (both visible or table sugar and hidden sugars consumed in processed or manufactured foods and drinks) and inadequate/infrequent tooth brushing is crucial in the accumulation of thick destructive bacterial plaque that produces lactic acid (Frances *et al.*, 2000).

The frequency and amount of non-milk extrinsic sugars (NMES) which are found in table sugar, confectionery, soft drinks, biscuits, honey, cakes, sweets, chocolate and fruit juice consumed is strongly associated with the rate of caries formation and periodontal diseases (Frances *et al.*, 2000). It is suggested that brushing teeth after eating sugary food may come too late to prevent the worst damage. Rather, it is better to brush before a sugary meal or snack as this helps to

remove plaque, reducing the amount of bacteria and hence the quantity of acid produced when sugar is eaten. This is because plaque bacteria will start producing acid as soon as fermentable sugar enters the mouth (Frances *et al.*, 2000).

Brushing thoroughly, twice a day with fluoridated dentifrice is an important oral self-care activity known to be associated with lower risk of dental caries (Nguyen *et al.*, 2008) and periodontal disease (Lang, Ronis & Farghaly, 1995). However, it is suggested that adolescents' psychological predisposition and family environment are likely to significantly influence their tooth-brushing behaviour (Ayo-Yusuf, Reddy & van den Borne, 2009). Furthermore, adolescents whose parents have low education are more likely to report less frequent toothbrushing compared to adolescents whose parents have high education (Levin & Currie, 2009).

School-based brushing programmes have so far been found to be ineffective in promoting oral health in the long term (Kay & Locker, 1998). It is suggested that one of the main reasons for this ineffectiveness is that most of these programmes have not been based on any theoretical behaviour change framework (Watt, 2002). Tooth brushing is determined by a variety of motivations. Three possible reasons that could motivate an adolescent to brush are namely, concerns about personal hygiene, a desire for grooming and a desire for good health (Hodge, Holloway & Bell, 1983; Dorri, Sheiham & Watt, 2009). Adolescents' brushing habits may also be influenced by social and living conditions (De Reu, Vanobbergen & Martens, 2008). Tooth brushing during adolescence is mostly related to cleanliness and appearance (cosmetic or aesthetic reasons), and less related to the promotion of oral health (Regis, Macgregor & Balding, 1994; Dorri, Sheiham & Watt, 2009; Ayo-Yusuf & Booyens, 2011).

Previous studies have demonstrated that adolescents who are not satisfied with life and school are less likely to display frequent brushing behaviour (Honkala, Honkala & Al-Sahli, 2007). It may also be that adolescents who do not brush regularly are those who have given up on achievements, social acceptance and prestige among peers (Koivusilta *et al.*, 2003). In Iran, the frequency of toothbrushing among adolescents is strongly associated with the quality and quantity of peer social networks. However, the quality of peer social networks has a stronger association than quantity of peer social networks with regards to the frequency of toothbrushing (Dorri, Sheiham & Watt, 2010). Maes *et al.* (2006) as well as Dorri, Sheiham & Watt (2009) report that adolescent girls brush more often than adolescent boys.

Inadequate/infrequent tooth-brushing and reasons for brushing among adolescents may be a reflection of existing psychosocial factors such as low self-image/self-worth and a lack of self-efficacy (Macgregor & Balding, 1991; Honkala, Honkala & Al-Sahli, 2007). For example, it is observed that adolescents who had attempted suicide are less likely to brush for cosmetic reasons as they conceivably suffer low self-esteem and therefore have negative perception of their self-image (Ayo-Yusuf & Booyens, 2011). Nevertheless, it must be emphasized that adequate removal of dental plaque depends more on the quality of brushing than its frequency (Puscasu *et al.*, 2007).

In South Africa, adolescent smoking and SOC levels are found to be independent predictors of self-reported gingivitis. Therefore, in addition to plaque control, smoking prevention and the teaching of stress-coping skills are suggested to be important interventions for promoting adolescents' gingival health (Ayo-Yusuf, Reddy & van den Borne, 2008).

Although dental plaque is the principal aetiological factor in caries formation and development of periodontal diseases there are many predisposing factors such as excessive alcohol consumption (Khoct *et al.*, 2009; Okagbare & Ayo-Yusuf, 2012), smoking (Reibel, 2003), systemic health conditions e.g. diabetes and obesity (Salvi, *et al.*, 1997; Grossi & Ho, 2000) that are associated with poor oral health. These factors tend to cluster (Yach *et al.*, 2005); and are in turn influenced by psychosocial factors such as educational aspiration, health locus of control, religiosity, self-concept, self-efficacy, SOC, as well as mastering over relative economic and social position (Glanz, Maskarinec & Carlin, 2005; Lindmark *et al.*, 2005; Neuner *et al.*, 2006; Kouvonen, *et al.*, 2008).

Table 1 is a summary of the main determinants of health related behaviours among adolescents and Table 2 a summary of health related behaviours among South African adolescents.

**Table 1: Summary of main determinants of health related behaviours among adolescents**

No	Determinants	Associations	Source(s)
1	Family life	Family is the first learning environment because parents are powerful role models and influence.	Coleman & Hendry, 1990; Grynych & Fincham, 1990; Amato & Keith, 1991; Amato, 1993; Lerner <i>et al.</i> , 1995; Myers, 2000; Morojele <i>et al.</i> , 2001; Bryant & Zimmerman, 2003; Griesbach, Amos & Curry, 2003; Kelly & Emery 2003; Currie <i>et al.</i> , 2004; Fostera <i>et al.</i> , 2005; Mestdag, 2005; Barrett & Turner, 2006; Fiese, 2006; Musick & Mare, 2006; Williams & Bonner, 2006; Todd <i>et al.</i> , 2007; Alamian & Paradis, 2009.
2	SES of parents/guardians	Parental occupation and family affluence are associated with a range of adolescent health outcomes - positive and negative.	Wilson <i>et al.</i> , 2000; Case <i>et al.</i> , 2002; Huurre, Aro & Rahkonen, 2003; Holstein <i>et al.</i> , 2004; Kupersmidt & Dodge, 2004; Spencer, 2005; Friestad & Klepp, 2006; Houseknecht & Hango, 2006; Levin <i>et al.</i> , 2007; Currie <i>et al.</i> , 2008; Gardner & Steinberg, 2008; Sabbah <i>et al.</i> , 2009; Fang <i>et al.</i> , 2011.
3	School environment	The next learning environment after the family is the school.	Samdal <i>et al.</i> , 1998; Department of Health & DrugScope, 2001b; Torsheim & Wold, 2001; McNeely, Nonnemaker & Blum, 2002; Blum <i>et al.</i> , 2003; Kubik <i>et al.</i> , 2003; Maharaj, Nunes and Renwick, 2009; Rovner <i>et al.</i> , 2011.
4	Peers/Friends	Can have positive and negative effects on adolescents' health behaviours.	Oetting & Beauvais, 1986; Berndt, 1992; Dishion <i>et al.</i> , 1995; Fisher & Bauman, 1998; Haynie, 2002; Currie <i>et al.</i> , 2004; Settertobulte & Matos, 2004; Wiefferink <i>et al.</i> , 2006; Martin & Huebner, 2007; Alamian & Paradis, 2009.



No	Determinants	Associations	Source(s)
5	Gender	Considerable gender differences can be found with regards to health-related behaviours among adolescents.	Wang <i>et al.</i> , 1995; Cardenal & Adell, 2000; Dick <i>et al.</i> , 2000; Rose <i>et al.</i> , 2001; Beyers <i>et al.</i> , 2004; Gaughan, 2006; Hardy <i>et al.</i> , 2006; Bonnell, Fletcher & McCambridge, 2007; Danielle <i>et al.</i> , 2007; Dick <i>et al.</i> , 2007; Kokkevi <i>et al.</i> , 2007; Currie <i>et al.</i> , 2012.
6	Educational Aspiration	Associated with health-related behaviours among adolescents.	Zuckerman, 1981; Koivusilta <i>et al.</i> , 2003; Laufer & Harel, 2003; Kuntsche & Gmel, 2004; Friestad & Klepp, 2006; Garg, Melanson & Levin, 2007; Geckova <i>et al.</i> , 2010.
7	Health locus of control	Associated with health-related behaviours among adolescents.	Rotter, 1982; Peterson, Seligman & Vaillant, 1988; Cockerham & Ritchey, 1997; Mcgregor <i>et al.</i> , 1997; McGuigan, 1999; Koerber <i>et al.</i> , 2006; The Koran 6:7.
8	Religiosity	Positively associated with health-related behaviours among adolescents.	Jessor & Jessor, 1977; The Koran 6:7; Lazarus & Folkman, 1984; Lorch & Hughes, 1985; Gorsuch, 1988; Lorch & Hughes, 1988; Smart & Patterson, 1990; Oleckno & Blacconiere, 1991; Payne <i>et al.</i> , 1991; Chatters, Levin & Taylor, 1992; Gallup & Bezilla, 1992; Singh & Mustapha, 1994; Donahue & Benson 1995; Wallace & Williams, 1997; Wong-McDonald & Gorsuch, 2000; Koenig, Larson & Larson, 2001; Koenig, McCullough & Larson, 2001; Tepper <i>et al.</i> , 2001; Fitchett, <i>et al.</i> , 2004; Ahlstrom & Osterberg, 2005; Ano & Vasconcelles, 2005; Leman, Ahmed & Ozarow, 2005.
9	Self-efficacy	Associated with general and oral health behaviours.	Bandura, 1994; Bandura, 1995; Bandura 1997; Syrjala, Knuutila & Syrjala, 2001; Pajares, 2002; Koerber <i>et al.</i> , 2006.

No	Determinants	Associations	Source(s)
10	Self-esteem	Associated with health related behaviours especially oral health behaviours.	Rogers, 1959; Macgregor, Regis & Balding, 1997; Kallestal <i>et al.</i> , 2000; Knecht <i>et al.</i> , 2001; Kallestal <i>et al.</i> , 2006; Koerber <i>et al.</i> , 2006; Wieffrick <i>et al.</i> , 2006; Honkala, Honkala & Al-Sahli, 2007; Alamian and Paradis 2009; Ayo-Yusuf & Booyens, 2011.
11	Mastery over relative economic and social position	Efficacious stress-buffer: a people's coping resource.	Pearlin <i>et al.</i> , 1981; Turner & Roszell, 1994; Thoits, 1995.
12	SOC	Associated with health related behaviours.	Antonovsky, 1979; Sagy & Antonovsky, 1986; Antonovsky, 1987; Dubos 1987; Larssen & Setterlind, 1990; Margalit and Eysenck 1990; Nyamathi, 1991; Midanik <i>et al.</i> , 1992; Antonovsky, 1993; McSherry & Holm, 1994; Glanz, Maskarinec & Carlin, 2005; Eriksson & Lindström 2006; Eriksson & Lindström 2008; Simonsson <i>et al.</i> , 2008; Ayo-Yusuf, Reddy & van den Borne, 2009. Dorri <i>et al.</i> 2010.

**Table 2: Summary of health related behaviours among South African adolescents**

Type of behaviour	Prevalence	Source(s)
Alcohol consumption	About half of adolescent learners have ever used alcohol with the Gauteng Province reporting a high rate of 65.1%. Binge drinking is associated with about 15% of 12-13 year olds and 22% among 15-16 years olds.	Medical Research Council, 2002; Reddy <i>et al.</i> , 2010.
Fruit & vegetables consumption	South African adolescents consume relatively low fruit and vegetables in spite of the development of food-based dietary guidelines.	Vorster, Love & Browner, 2001.
Refined sugars consumption	50.3% of adolescent learners drink sweet cool drinks and 44.2% eat cakes and/or biscuits often with no significant variation by age or gender.	Reddy <i>et al.</i> , 2010.
Smoking	National average of adolescent learners who have tried a cigarette is about 29.5%.	Reddy <i>et al.</i> , 2010.

## 2.22 Concluding remarks to the literature review

It is clear from the literature review as summarized in Tables 1 and 2 that there is paucity of information on psychosocial factors associated with health compromising behaviours among adolescents and none on parents' perception of the psychosocial factors associated with health compromising behaviours among adolescents.

Some studies verify the influence of family on oral health outcomes of adolescents, considering that their families play a central role in promoting their general/oral health. Parents' perception of the psychosocial factors associated with adolescent health compromising behaviours may interfere in their adolescents' oral health even as parents' socioeconomic characteristics are associated with their subjective perceptions of their adolescents' oral health status (Talekar *et al.*, 2005). Parents' perception of the individual-level psychosocial stressors and resources which are crucial in a better understanding of adolescent general health behaviours have not received the desired attention from investigators. Consequently, there is hardly any information on such association in the literature. The review has also shown significant negative effects of alcohol consumption, smoking, inadequate fruit and vegetable consumption, inappropriate consumption of refined sugars and inadequate/infrequent tooth brushing on adolescents' general/oral health.



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## CHAPTER 3

### AIM AND OBJECTIVES

#### 3.0 Introduction

The aim and objections of any research are the yardsticks by which the results and findings of the research are evaluated and assessed.

#### 3.1 Problem statement and research question

Very few studies have investigated parents' perception of the psychosocial factors associated with health compromising behaviours related to oral health among adolescents in South Africa. Health compromising behaviours of alcohol consumption, smoking, inadequate consumption of fruit and non-starchy vegetables, inappropriate consumption of refined sugars and inadequate/infrequent toothbrushing among adolescents is a major public health concern in South Africa with implications for oral health related quality of life and the cost of health care. The seriousness of the problem is highlighted by the 2nd South African National Youth Risk Behaviour Survey of 2008 (Reddy *et al.*, 2010) and other studies (Medical Research Council, 2002; Vorster, Love & Browner, 2001) as summarized in Table 1.2. Insecurity, low self-esteem, and social isolation may also have profound adverse effects on the health of the adolescent (WHO, 1998). The knowledge problem of this study is the lack of evidence of the right parental perception of the psychosocial factors associated with health compromising behaviours related to oral health among adolescents in Gauteng Province of South Africa.

The following research question is addressed in this study: *What are the parental perceptions regarding the psychosocial factors associated with health compromising behaviours related to oral health among adolescents in South Africa?*

### **3.2 Aim and specific objectives**

The aim of this study was to investigate parents' perception of the psychosocial factors outside marital and socioeconomic status that are associated with health compromising behaviours related to oral health among adolescents in Gauteng Province of South Africa.

The specific objectives of the study were:

- (i) To explore parents' knowledge regarding the health compromising behaviours viz. alcohol consumption, smoking, inadequate consumption of fruit and non-starchy vegetables, inappropriate consumption of refined sugars and inadequate/infrequent toothbrushing that affect oral health of adolescents in Gauteng Province of South Africa.
- (ii) To assess parents' understanding of how the psychosocial factors of educational aspiration, religiosity, self-esteem and SOC (propensity to cope with stress) influence the aforementioned health compromising behaviours among adolescents in Gauteng Province, South Africa.
- (iii) To explore parents' perceptions on how to address the challenges associated with the above five health compromising behaviours among adolescents in Gauteng Province of South Africa.

### **3.3 Conclusion**

Chapter 3 presented the aim and objections of this study while chapter 4 presents the qualitative research strategy, design, research setting, the profile of participants, data gathering and data analysis engaged in the study

## CHAPTER 4

### RESEARCH DESIGN AND METHODS

#### 4.0 Introduction

In this chapter the qualitative research strategy, design, research setting, profile of participants, data gathering and data analysis engaged in the study are described.

#### 4.1 Justification for a qualitative study

The goal of qualitative research is to develop concepts that enable an understanding of social phenomena in natural (rather than experimental) settings, giving due emphasis to the meanings, experiences, and views of all the research participants. It also enables the researcher to access areas not amenable to quantitative research (Pope and Mays, 1995). In addition, according to Domegan and Fleming (2007), it is particularly relevant in discovering and exploring issues concerning an existing problem where little is known about the problem and in this instance parents' perception of psychosocial factors associated with health compromising behaviours related to oral health among adolescents in South Africa.

#### 4.2 Study Design

The design for this study was qualitative exploratory and is bottom-up i.e. the researcher suggested a theory from the data collected. According to Creswell (2003), qualitative research is a systemic subjective approach used in exploring life experiences and to explain behaviours or beliefs or identify processes (Hennik, Hutter & Bailey, 2011). It allows the researcher to identify issues from the perspectives of the study participants as well as understand the meaning and interpretations that they give to behaviours and events or objects (Hennik, Hutter & Bailey, 2011). Its subjectivity is due to the fact that participants are able to freely express their views about their experiences and perceptions using their own words and concepts (Berg, 2007) and this was realized in this study.

According to Terre Blanche, Durrheim and Painter (2006), qualitative research seeks to preserve the integrity of narrative data and attempts to use the data to exemplify core themes embedded in contexts and generate theory and theoretical propositions. This was also achieved in this study as the researcher gained insight and meaning into the views of parents from their own perspectives regarding the psychosocial factors associated with health compromising behaviours related to oral health among adolescents in South Africa. Creswell (2003), indicates that qualitative research must allow the participants to freely express themselves, thereby emphasizing their human capacity.

Qualitative research is fundamentally interpretive (Denzin & Lincoln, 2008). This means that qualitative researchers attempt to make sense of, or interpret events in terms of the meanings people bring to them. Bryman (2008) describes qualitative research as an approach that emphasizes words rather than quantification, in the collection and analysis of data. Qualitative research also attempts to discover the depth and complexity of a phenomenon within a holistic framework (Burns & Grove, 2005).

Characteristics of qualitative research include (Burns & Grove, 2005):

- Involving a broad, subjective and holistic approach that tries to understand and explain human behaviour.
- Being humanistic, because it is research with people, rather than on people.
- Involving the qualitative researcher as the main instrument in the research process.
- Being naturalistic as it explains a phenomenon from the unique perspective of the respondents.
- Using data collection methods that are usually unstructured or semi-structured interviews and observations.
- Using data analysis that involves interpretation of words rather than quantities.

The above characteristics of qualitative research were realized in this study. The central purpose of exploratory study is to develop a valid definition of a concept, describe the process that explains the phenomenon under study. In exploratory design, data are collected overtime to increase the validity of the concept either being developed or already developed.



### **4.3 Research strategy**

The research strategy used in this study was inductive, deductive and abductive. This is because the research principle behind the grounded theory method is neither inductive nor deductive, but combination of both by the way of adductive reasoning. This leads to a research practice where data sampling, data analysis and theory development are not seen as distinct and disjunct, but as different steps to be repeated until one can describe and explain the phenomenon that is being investigated (Charmaz, 2006). The stopping point was reached when new data did not change the emerging theory anymore. This strategy enabled the researcher to discover new meaning and provide useful information on parental perception of the psychosocial factors associated with health compromising behaviours related to oral health among adolescents in Gauteng Province and suggest a grounded theory.

Induction is a type of reasoning that begins with the study of a range of individual cases and extrapolates from them to form a conceptual category (Charmaz, 2006). It means moving from the particular to the general; from the descriptive level to the conceptual level. Inductive reasoning is more open-ended and exploratory in nature and contrasts with deductive reasoning which is more concerned with testing or confirming a hypothesis. Deductive reasoning is a type of reasoning that starts with the general or abstract concept and reasons to specific instances (Charmaz, 2006). Abductive reasoning considers all the theoretical explanations of the data, forming hypotheses for each one, thereafter checking each hypothesis empirically by examining the data, and pursuing the most plausible one (Charmaz, 2006).

### **4.4 Research setting**

Due to the contextual nature of interventions required to address problems of health compromising behaviours among adolescents, community-specific information was necessary. A brief description of the context is therefore, provided as a background to the study. Gauteng Province is the smallest of South Africa's nine provinces with the land area is 18 178km<sup>2</sup> which is about 1.4% of national land area. It has an estimated population of 12 272 263 (23.7% of national figure) by the 2011 census of which 49.6% are female. It had 3 909 002 households

(27.1% of national figure) with 34.3% female headed households. Average household size was 3.0 and the unemployment rate 26.3%.

About 3.6% of Gauteng population aged 20+ had no schooling, 34.7% aged 20+ high school and 17.6% higher education. Gauteng Province (Figure 1) is divided into three metropolitan municipalities (Tshwane, Johannesburg and Ekurhuleni/East Rand) that were involved in this study and two district Municipalities (West Rand and Sedibeng). Gezina is a suburb of Tshwane City, Hillbrow a suburb of Johannesburg City, Alberton a town in Ekurhuleni/East Rand municipality while both Soweto and Katlehong are ‘townships’ of Johannesburg and East Rand respectively. Alberton is to the south of Johannesburg and east of Soweto while Katlehong is to the south of Alberton. Much of the struggle against apartheid was fought in and around Soweto, south of Johannesburg which is now home to more than 2 million people.



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**Figure 1: Map of Gauteng Province, South Africa**

Tshwane (Pretoria) is the administrative Capital of South Africa and is home to the Union Buildings, the seat of National Government. Tshwane is among the six largest metropolitan municipalities in South Africa and the second largest in Gauteng, as measured by Gross Domestic Product (GDP). Tshwane covers 6 368Km<sup>2</sup> with a population of 2 921 488 with unemployment rate of 24.2%, 4.2% no schooling aged 20+, 23. 4% higher education aged 20+. Tshwane has 911 536 households with 35.8% female headed households and the average household size of 3.

Johannesburg, south of Pretoria is the Capital and economic centre of Gauteng Province, with a population of 4 434 827, unemployment rate of 25%, 2.9% of no schooling aged 20+, 19.2% of higher education aged 20+. It covers an area of 1 645km<sup>2</sup> and it is the richest metropolitan municipality in Gauteng Province. The number of households in Johannesburg is 1 434 856, 36.2% of which are female headed with the average household size of 2.8 (Statistics South Africa, 2011). Three metropolitan municipalities: Tshwane, Johannesburg and Ekurhuleni/East Rand were involved in this study. The population profile of Gauteng Province is presented in Table 3.

**Table 3: Demographic Profile of Gauteng Province**

Ethnic group	Male		Female		Total	
	No	%	No	%	No	%
Black African	4823966	50.8	4669718	49.2	9493684	77.4
Coloured	203820	48.1	219774	51.9	423594	3.5
Indian/Asian	180916	50.7	175658	49.3	356574	2.9
White	930989	48.6	982895	51.4	1913884	15.6
Others	50184	59.4	34343	40.6	84527	0.7
<b>Total</b>	<b>6189875</b>	<b>50.4</b>	<b>6082388</b>	<b>49.6</b>	<b>12272263</b>	<b>100.0</b>

(Statistics South Africa, 2011)

The demographic profile includes the population of the various ethnic groupings in Gauteng Province and sex distribution.

#### 4.5 Study Population

According to Mitchell and Jolley (2004), Burns and Grove (2009) population is defined as all elements (individuals, objects, events or substances) that meet the sample criteria of a study. Strydom (2002) indicates that population also refers to the entire group of people that meet a designated set of study criteria. Simply put, population is the total number of participants from which the sample is selected in a research. Due to financial and practical constraints, it is hardly possible to study all members of a given population. It is therefore, imperative to select a sample of the target group.

The target population for the study was parents/caregivers of adolescents who reside in Gauteng Province of South Africa. Gauteng Province was chosen for this study because it has a significantly higher prevalence of health compromising behaviours among adolescent learners when compared with the national figures. For example, in the 2<sup>nd</sup> South Africa National youth Risk Behaviours Survey of 2008 Gauteng province has the highest prevalence of learners (34.9%) who had been involved in a physical fight against the national figure of 31.3%; ever used alcohol 65.1% against national figure of 49.6%; ever tried a cigarette 40.5% against national 29.5% (Reddy *et al.*, 2010).

### **Sampling**

Sampling is the process used in selecting cases for inclusion in any research study (Terre Blanche & Durrheim, 2002). Purposive theoretical sampling was used for this study. Purposive sampling involves the conscious selection of certain subjects, elements, events or incidents by the researcher (Polit & Beck, 2008) and information-rich persons were consciously selected for this study (Burns & Grove, 2005). In qualitative research study, sampling is relatively limited, based on saturation and samples are usually quite small (Mason, 2010). The sample size therefore, is not determined statistically and not representative too (Sarantakos, 2000). In this study the sample size was determined by theoretical saturation of data. Data saturation is the situation where the data has been richly fed by the information collected and there is no need for further interviews as they are not likely to generate anything new (Terre Blanche & Durrheim, 2002; Francis *et al.*, 2010).

### **4.6 Data Collection**

Data collection is described in terms of data collection method, data collection instrument, planning for data collection and the procedure. The data collection method of this study was focus group interviews which are organised discussions among a small group of selected individuals (Blackburn, 2000; Gibbs, 1997), discussing a specific, predefined and limited topic under the guidance of a facilitator or moderator (Blackburn, 2000; Robinson, 1999). A focus group interview is a collective activity, where several perspectives on the given topic can be obtained, and where the data is produced by interaction (Gibbs, 1997).

This method also called the ‘group depth interview’, involved in this instant, asking a group of parents about their understanding and feelings regarding the psychosocial factors associated health compromising behaviours related to oral health among adolescents starting out with guiding questions (Appendix A). According to Bailey (2007) “a guiding questions schedule involves a list of issues to be addressed and answered during an interview and as well allows flexibility”.

The gathering instrument employed in the present study was semi-structured interviews using a guiding questions schedule (Appendix A). SOC was simplified as (propensity to cope with stress) in the guiding question schedule given the likelihood of uncertainty of study participant’s understanding of the term ‘sense of coherence’. Welman and Kruger (2001) describe a semi-structured interview as a method in which interviews are conducted on the basis of a loose structure consisting of open ended questions that define the area to be explored, at least initially, and from which the researcher or interview participants may diverge in order to pursue an idea in more detail. The data gathering was at first by means of selective sampling to establish a baseline framework for the theoretical sampling that followed. Selective sampling identified the core concern of the respondents and the methods that they used to resolve it. Whereas, theoretical sampling was undertaken to gradually investigate in more details such methods. Respondents were selected in order to gain a deeper understanding of the generated concepts, categories, and their properties. It involved the conscious selection of certain subjects by the researcher as the research progresses in order to realize the purpose of a study (Pilot & Beck, 2008). The sample size of this study was therefore determined by theoretical saturation of data. The interviews were conducted in settings convenient and conducive for participants. The researcher established rapport and credibility with the participants (Creswell, 2003) through the help of facilitators that were engaged for this study.

### **Rationale and use of focus group interviews**

According to Gill *et al.* (2008), interviews and focus groups are the most common methods of data collection used in qualitative healthcare research. The purpose of an interview is to allow the researcher to understand the experiences and perceptions of other people as well as their meaning (Francis *et al.*, 2010).

Furthermore, an interview is a natural form of interacting with people. It gives an opportunity to know people more intimately and understand how they think and feel. The participants in this study were able to give a good detailed picture of their perceptions or beliefs about adolescents' unhealthy behaviours in this process of interview because the method of focus group interview explicitly includes and uses group interaction to generate rich data on collective views and the meanings that lie behind these views via group dynamics.

Focus group interviews are used in engendering a deep understanding of participants' beliefs, experiences, motivations and views regarding specific issues. They are also being increasingly used in dental research to explore and illuminate diverge range of topics related to the dental profession, dental services, dental patients (Chestnutt & Robson, 2002) and parents as in this instance. This is particularly so in accessing areas not amenable to quantitative methods and/or where depth, insight and understanding are required (Gill *et al.*, 2008).

Some potential advantages of using focus group interview method include that it:

- Does not discriminate against people who cannot read or write,
- Encourages participation from those who are reluctant to be interviewed on their own (such as those intimidated by the formality and isolation of a one to one interview),
- Encourages contributions from people who feel they have nothing to say or unable to initiate discussion but engage in the discussion generated by other group members,
- Is an effective method of collecting qualitative data as common ground can be covered rapidly and inputs can be obtained from several people at the same time (Hutt, 1979, Ouimet *et al.*, 2004).
- During discussions, through the synergistic group effort produces a snowballing of ideas which provokes new ideas (Blackburn, 2000, Gibbs, 1997) and
- Generates data that has greater range, depth, specificity and personal context (Blackburn, 2000).

The disadvantages include:

- Not all respondents are comfortable with working in a group environment and may find giving opinions in the bigger group intimidating (Gibbs, 1997, Ouimet *et al.*, 2004).

- The outcome of the interview can be influenced by the opinion of one person where the individual dominates and some participants are reluctant to speak or where opportunity is not given for all participants to air their views (Blackburn, 2000).
- The researcher has less control over the data than in a survey due to the open-ended nature of the questions (Gibbs, 1997).

The disadvantages were mitigated by ensuring that the moderator had sufficient skills and participants are implored to take turns to ensure that all participants have equal opportunity to contribute. These conditions were met in this study.

A pre-test was conducted on a group of six parents using the interview schedule (Appendix A) as a guide which made it possible to adjust the research tool and improve the interviewing skills of the researcher. The interview schedule after some adjustments, was found to be adequate to guide the researcher to obtain a thorough understanding of the perceptions of parents regarding the psychosocial factors associated with health compromising behaviours related to oral health among adolescents in South African. All the processes of the study (interviewing skills, transcribing, qualitative data analysis and interpretation) was tested with the pretest to ensure the researcher's qualitative research skills are at the required level.

Planning for data gathering and the measures taken during the study to enhance the quality of the research were as follows:

- A proposal including a guiding questions schedule (Appendix A) was given ethical clearance by the Senate Research Ethics Committee of the University of the Western Cape (Appendix B).
- The purpose of the study was explained again at the beginning of each interview using the Participant Information Leaflet Appendix C).
- Written or verbal informed consent was obtained from the participants before the interviews using the Informed Consent document (Appendix C).
- Focus group interviews were conducted in settings that were conducive and convenient for the participants.
- Interviews consisted of carefully worded open-ended questions to permit the participants to speak freely



- Enough time was allowed to explore fully participants' perception of the topic.
- Notes were taken with permission to capture themes while the participants were speaking.
- An Audio recorder was used with the permission of participants (Appendix C) in order to assure the researcher recalled verbatim the participants' responses later.
- Body language of both the researcher/facilitators and participants were taken into account and not only the verbal interview.
- Field notes were written on participants' reaction and mannerism as well as environmental factors.

The demographic profile of the participants which include educational level, age, ethnic group, health compromising behaviours, marital status, religion, sex and employment were obtained during the interviews. Information about the adolescents between 10-19 years of age living with them and their relationship were also gathered.

### **Data collection proper**

A non-probability purposive theoretical sampling method was used in this study. The interviews of the five focus group subjects who met the criteria of the study, of being a past/current parent or caregiver to an adolescent were conducted between months of March and November, 2015. The interviews were conducted in English except in one instance when one participant (a grandmother) in the 5<sup>th</sup> focus group interview spoke mostly in the Sotho language. Three of the participants in this particular group assisted with the translation from Sotho to English language when she was unable to articulate her contributions adequately in English.

Although no attempt was made to achieve a provincially representative sample, the study endeavoured to accommodate participation from both the rural (Katlehong in East Rand/Ekurhuleni Municipality and Soweto in Johannesburg Municipality) and urban/metropolitan settings (Alberton in East Rand/Ekurhuleni Municipality, Hillbrow in Johannesburg Municipality and Gezina in Tshwane Municipality) in order to ensure that the data was not skewed. It was also for this reason that the four racial groupings in South Africa (Black, Coloured, Asian/Indian and White) were recruited and the views of the two largest global religious movements (Christianity and Islam) obtained.

This is therefore, a Double-Layer Design, which included geographic areas as the first layer and the different audiences as the second layer. In this version of the traditional focus group interview design, the researcher was able to make comparisons between any of the layers of the design (Krueger & Casey, 2000).

The venue of each focus group interview was accessible and acceptable to all the invitees. The researcher introduced himself and welcomed the parents at the beginning of each interview session. Before the commencement of the interviews the researcher ensured that the participants meant the inclusion criteria by the opening question: *“Please, has any adolescents between the ages of 10 to 19 year lived with you or living with you at the moment?”* (Appendix A). They were given information about the study and shown the ethical approval for the study. They further read and signed the informed consent forms after the purpose of the study had been explained clearly by the researcher to their understanding (Creswell, 2003). They were also informed that their participation in the interview was entirely voluntary, that anyone may refuse to answer any questions and that anyone may withdraw from the interview at any time without question or consequences.

Permission was obtained from each parent for the use of an audio recorder at the commencement of every interview (Appendix C). Terre Blanche and Durrheim (2002) state that interviews should be recorded using an audio recorder in order to ensure the accuracy of data. After consent was given, each participant was requested to complete a short questionnaire on demographic characteristics. Apart from the opening question, the rest of the questions were open-ended to elicit information (Creswell, 2012) and give the parents the opportunity to express themselves without reservation. This opening question was meant to confirm whether the participant has met the inclusion criteria of the study.

The focus group interview participants were very enthusiastic, aged between 28 and 75 years. Altogether a mix group of 37 including 23 fathers, one grandfather; 10 mothers and three grandmothers. Thirteen of them had tertiary education, 14 had matric and 10 less than matric. The recruitment yielded 25 Blacks, seven Coloured, three Indians and two Whites. Thirty church attendees and seven Muslims were among the participants. Each of these focus groups was homogeneous in the sense of shared experience but diverse in terms of professions (Table 6).

Professionals were entreated to use the layperson's language for the benefit of others in order to reduce any likelihood of inhibition. Inhibition due to hierarchy was not observed in the 3<sup>rd</sup> focus group probably because of the familiarity between the dentist and his employees. The 3<sup>rd</sup> focus group interview was in two parts. The second part was conducted to compensate for the time lost during the interview as result of the interruptions of practice environment and the joviality of the participants as this was a naturally occurring group. The 4<sup>th</sup> focus group interview was conducted in three phases, in-between Muslim prayers and was consisted of men only because of the challenges of getting the consent of the husband of a Muslim woman before interviewing her.

Respondents were implored to take turns to ensure that all participants had equal opportunity to contribute. There were a lot of interjections especially by one participant in the 1<sup>st</sup> focus group. The Muslim parents referred to the Koran more often than did Christian parents to the Bible to support their contributions. The Muslim parents also reported less occurrence of their adolescents' involvement in smoking, drug abuse and other antisocial behaviours. Some interview respondents asserted that the adolescent is the product of early childhood so the focus should be on early childhood, even from infancy through preadolescence and not only on the adolescents. During the discussions, tempo of speech rose and fell intermittently and there was plenty of laughter especially in the 1<sup>st</sup> and 3<sup>rd</sup> focus groups. Towards the close of the interview sessions only one or two participants responded to the questions, indicating to the moderator that it was time to start winding up. There were nonverbal communications and gesticulations and a lot of exclamations such esh!, ish! yoh!, ey, ey!, Eieh, eish, mamasia! There were background noises of children playing in the first two interviews; background sounds of children reciting the Koran in the 4<sup>th</sup> interview and of dental office activities in the third. Overall the interviews were a great success. The recorded interviews were transcribed verbatim by the researcher who later proofread the transcriptions against the audio recorder and revised the transcript file accordingly.

### **Sample Size**

The optimum size for a focus group is six to eight participants (Gill *et al.*, 2008). However, Stewart and Shamdasani (1990), suggest that it is better to slightly over-recruit for a focus group and potentially manage a slightly larger group than under-recruit and risk having to cancel the interview or having unsatisfactory and limited discussion.

Each focus group had a minimum of six participants with the 2<sup>nd</sup> focus group comprising 10 participants. This was considered satisfactory by the researcher. This sample size of the present study was 37. The qualitative nature of the study requires that saturation governs the sample size (Struebert-Speziale & Carpenter, 2007). Theoretical saturation was achieved at the 4<sup>th</sup> focus group interview which was in line with Krueger and Casey's (2000) assertion that most focus group interviews saturate at the 3<sup>th</sup> or 4<sup>th</sup>. The sample size of the first four focus group interviews was 31. The fifth focus group interview were conducted not only to enhance saturation but also to bring the sample size to over 31 in line with other studies worldwide that use qualitative approaches and qualitative interviews as the method of data collection (Mason, 2010).

Apart from qualitative research being essentially concerned with meaning and not the making of generalised hypothesis statements, the sample size of 37 was deemed adequate by the researcher considering the following reasons. According to Ritchie, Lewis and Elam (2003) there is a point of diminishing return to a qualitative sample. As the study progresses the gathering of more data does not necessarily lead to new information and this was observed at the end of the 4<sup>th</sup> focus group interview. Moreover, one incidence of a piece of data is all that is necessary to ensure that it becomes part of the analysis framework. Frequencies are scarcely imperative in qualitative research, as one incidence of the data is potentially as useful as many in understanding the process behind a topic. Because qualitative research is very labour intensive, analysing an outsized sample can be time consuming and often simply unworkable and of no additional value (Ritchie, Lewis & Elam, 2003). The five focus group interviews generated a large amount of data as more time was allowed to avoid unsatisfactory and limited discussions. Although on the average, healthcare interviews last 20-60 minutes (Gill *et al.*, 2008), the average length of the five focus group interviews in this study was 1hr 45mins and each ranged between 1hr 6mins to 2hr 45mins in length because of the nature of the topics and participants. Finally, for the grounded theory methodology applied in this study, Creswell (1998) indicated that the sample size of 20-30 is adequate as did Morse (1994) that the sample size of 30-50 is adequate.

## 4.7 Ethical Considerations

According to McMillan and Schumacher (2009) and Rani and Sharma (2012) research should be conducted in such a way as to protect the rights and welfare of participants. The following aspects were taken into consideration:

- This study protocol was subjected to review and approval by the Senate Research Ethics Committee of the University of the Western Cape (Ref No. 11/1/55).
- Only participants who were willing to take part in this study were recruited after clear non-technical explanation of what participation entails to allow for informed decision by the participants. (Appendix C).
- The venue of each focus group interview was accessible and acceptable to all the invitees.
- The researcher was a qualified dentist of many years' experience with adolescents and parents. In addition, he was trained to do interviews and had acquired the relevant skills through many consultations in families and communities.
- Confidentiality was maintained throughout the study by ensuring that the identities of the participants were not revealed during the course of study. Anonymity and confidentiality is inherent in the concept of privacy and privacy refers to an agreement between persons that limit others access to confidential information (Strydom, 2002). Pseudonyms were used to protect the participants' identity.
- Participants were not deceived. According to Neuman (2003) deception occurs when the researcher intentionally mislead participants by way of written or verbal instructions or the withholding of relevant information. The purpose of the study was clearly explained so that participants could freely make their decision and were informed that they could terminate their participation at any time without any penalty.
- Permission to compile and publish a report was obtained from participants. The ethical obligation to ensure that the information obtained from the participants is accurately and objectively compiled rest on the researcher.

## 4.8 Records

All data collected was securely stored in a place not accessible to any other person without permission. No related information will be given out without participants' consent.

#### **4.9 Dissemination of Findings**

A summary of the study results and recommendations will be disseminated with publications in peer-reviewed scientific journals and presentations at scientific meetings. A lay version of the findings and the recommendations from the study will also be made available through a community outreach in the main local languages in Gauteng Province.

#### **4.10 Conclusion**

The research design and data gathering methods applied in this study including their justification as well as the ethical consideration applied throughout the study were presented in chapter 4. The background to grounded theory methodology and its application in the analysis of study data are presented in chapter 5.



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## CHAPTER 5

### GROUNDING THEORY METHODOLOGY APPLIED IN DATA ANALYSIS

#### 5.0 Introduction

This chapter presents the background to grounded theory methodology and its utilization in the analysis of the data of this study.

#### 5.1 Background to grounded theory methodology

Grounded theory methodology (GTM) is a widely used research methodology that originated in the field of sociology but is currently being used across a wide array of disciplines and subject areas (Bryant & Charmaz, 2007). It became the dominant qualitative methodology in the 1980's. It is a systematic methodology in the social sciences that involves the construction of theory through the analysis of data (Martin & Turner, 1986). As the researcher reviews the data collected, repeated ideas, elements or concepts become apparent, and are tagged with codes, which have been extracted from the data. A concept is the overall element and includes conceptual elements standing by themselves. As more data are collected, and as data are re-reviewed, codes are grouped into concepts, and then into categories. These categories may become the basis for propositions or a new theory. Therefore, GTM is quite different from the traditional model of research, where the researcher chooses an existing theoretical framework, and only then collects data to show how the theory does or does not apply to the phenomenon under investigation (Allan, 2003).

GTM was originally developed by Glaser and Strauss (1967) as a new methodology defined as "the discovery of theory from data" and was a reaction at the same time to the dominant hypothetico-deductive use of "grand theories" in the social research of the 1960s (Thornberg, 2012). Glaser and Strauss wrote their book *'The Discovery of Grounded Theory'* with the aim of "closing the embarrassing gap between theory and research" and "improving social scientists' capacity for generating theory (LaRossa, 2005).

After the publication of their initial book (Glaser & Strauss, 1967) the two authors diverged in their views regarding the development and nature of grounded theory. This brought about the Glaserian and Straussian approach respectively. The classic GTM of Glaser was chosen for this research because it constantly focuses on the emergent theory as opposed to forcing concepts as in the case Strauss's version, which is prescriptive.

The goal of a grounded theory (GT) study is to discover the participants' main concern and how they continually try to resolve it. The questions the researcher repeatedly asks in grounded theory are "What's going on?" and "What is the main problem of the participants, and how are they trying to solve it?" These questions were answered by the core category and its subcategories and properties as the research progressed.

It is pertinent to state here that if a researcher's objective is accurate description, then another method should be applied since grounded theory method is not a descriptive method. The use of description in the grounded theory method is mainly to explain concepts. Also validity in its traditional sense is consequently not an issue in GT, which instead should be judged by fit, relevance, workability, and modifiability (Glaser & Strauss, 1967; Glaser, 1978; Glaser 1998).

**Fit.** Has to do with how closely the concepts fit with the incidents they are representing, and this is related to how thorough the constant comparison of incidents to concepts was done.

**Relevance.** A relevant study deals with the real concern of participants.

**Workability.** The theory works when it explains how the problem is being solved with much variation.

**Modifiability.** A modifiable theory can be altered when new relevant data are compared to existing data.

A GT is therefore never right or wrong, it just has more or less fit, relevance, workability and modifiability. Furthermore, since a GT is not tied to some earlier theory, it is often fresh and new and has the potential for innovative discoveries in science and other areas.



## 5.2 Grounded theory and extant literature

The literature reviewed regarding GTM has been a controversial issue since Glaser and Strauss stated that there should be no prior literature review before embarking on research (Charmaz, 2006). Lempert (2007) deviates from this position for pragmatic reasons stating that in “order to participate in the current conversation, one needs to understand it.” She continues to illustrate that the literature review provides the researcher with the current parameters of the conversation, in other words, the gaps (Lempert, 2007). Bryant & Charmaz (2007) list two reasons against Glaser and Strauss’ advocating no literature review prior to research: all researchers have some preconceived ideas relevant to the research area before embarking on a research project; and the advice to postpone or delay the literature review usually comes from experienced researchers who have extensive knowledge and experience to draw from. Hood (2007) asserts that one can use a constructivist instead of an objectivist approach and retain the power of grounded theory as well as use the literature review without losing theoretical power.

The constructivist approach was applied in this study as the researcher considered it a more realistic approach. This is because the process of grounded theory encompasses an acknowledgment of the researchers’ bias, the selection of a data collection site, the data collection process, the process of coding and analysis, and the compilation of results. Below is the comparison between objectivist and constructivist grounded theory (Table 5).

**Table 4: A comparison between objectivist and constructivist grounded theory**

<b>Objectivist Grounded Theory</b>	<b>Constructivist Grounded Theory</b>
Assumes an external reality	Assumes multiple realities
Assumes discovery of data	Assumes mutual construction of data
Assumes conceptualizations emerge from data	Assumes researcher constructs Categorizations
Views representation of data as Unproblematic	Views representation of data as problematic, relativistic, situational, and partial
Assumes the neutrality, passivity, and authority of the observer	Assumes the observer's values, priorities and positions, and actions affect views
Views data analysis as an objective process	Acknowledges subjectivities in data analysis, recognizes co-construction of data, engages in reflexivity
Gives priority to researcher's views	Seeks participants' views and voices as integral to the analysis
Aims to achieve context-free generalizations	Views generalizations, as partial, conditional, and situated in time, space, positions, action, and interactions
Focuses on developing abstractions	Focuses on constructing interpretations
Aims for parsimonious explanation	Aims for interpretive understanding

**Charmaz, 2008**

### **5.3 Benefits offered by grounded theory**

GTM was selected as the research methodology because it has the goal of generating concepts that explain the way people resolve their central concerns regardless of time and place and gives the researcher freedom to do so. It also made more sense and the progression of research is logical and practical. Moreover, it has been successfully used in IS research (Hughes & Jones, 2004). The benefits offered by grounded theory for IS research include the method's capacity to interpret complex phenomena (Charmaz, 2003), the method's ability to fit with different types of researchers (Martin & Turner, 1986) and as allude to above, its absence from the constraints of a priori knowledge (Glaser, 1978; Glaser & Strauss, 1967).

Other methods may have the effect of forcing preconception through the transfer of inaccurate theoretical assumptions upon the emerging phenomena but grounded theory overcomes this by providing a lens that does not bias emergent theory with *a priori* assumptions and does not thrust forward a selection of preconceived theories from which the researcher must explain a socio-technical phenomenon.

#### 5.4 Criticisms of grounded theory

As with most research methods, grounded theory is not without its critics. The most common in the field of IS reposes with the assertion that while the method uses interpretivist and constructionist tools, it stems from positivism/objectivism. It therefore suffers from internal misalignment (Bryant, 2002). Another criticism is that it can be a labor-intensive and time-consuming process and the coding scheme is quite complex (Kondracki *et al.*, 2002).

#### 5.5 Data Analysis

Qualitative data analysis strategy involves the examination of words and this is performed concurrently with data collection in line with Tesch's approach (Appendix D) (Creswell, 2009) in the stages contained in Table 5.

**Table 5: Stages of analysis**

Stages	Purpose
Codes	Identifying anchors that allow the key points of the data to be gathered
Concepts	Collections of <b>codes</b> of similar content that allows the data to be grouped
Categories	Broad groups of similar <b>concepts</b> that are used to generate a <i>theory</i>
Theory	A collection of categories that detail the subject of the research

It should be emphasized here that these stages of data analysis are not as simplistic and distinct because data gathering and data analysis in grounded theory is a repetitive process. However, once the data is being collected, grounded theory analysis involves the following basic steps:

**Coding text and theorizing:** In grounded theory research, the search for the theory begins with the very first line of the very first interview. It involves coding a small chunk of the text, line by line or paragraph by paragraph. Useful concepts are identified and key phrases marked.

The concepts are named and the above mentioned steps are repeated until the whole data is covered. According to Strauss and Corbin (1998), this process is called open coding and Charmaz (2006) called it initial coding. The subsequent steps involve a lot more theorizing than the initial coding and go on throughout the grounded theory process up to the development of a theory.

**Memoing and theorizing:** Memos are the researcher's notes about the emerging concepts, containing observations and insights. They are the intermediate between the coding and the first draft of the completed analysis. Memoing starts with the first concept that has been identified and continues right through the process of breaking the text and of building theories (Appendix E).

**Integrating, refining and writing up theories:** Once coding categories emerges, the next step is to link them together in theoretical models around a central or core category/categories that hold(s) everything together.

Data analysis used in the present study was the grounded theory approach. It involved the examination of words and this was performed concurrently with data gathering (Brink, 2002) and in line with Tesch's eight steps in qualitative data analysis (Appendix D) (Creswell, 2009). In brief, the analysis process in grounded theory involves concept labelling, categorizing, identifying core categories, finding relations among categories, and generating a theory from such relationship as opposed to the analysis process in qualitative content analysis which comprises selecting the unit of analysis, categorizing and finding themes from categories. Data analysis in grounded theory and data analysis in qualitative content analysis share similarities in that both involve a systematic coding process. Both entail coding, finding categories and theme(s); however, the procedure is different. Specifically, data collection and analysis are parallel in grounded theory, and the procedure is neither linear nor sequential. The amount of data for analysis is based not on availability but on theoretical saturation. This is because of the nature of theoretical sampling, where theory generated from the data actually guides the decision about what kinds of data are appropriate for subsequent data collection. Another difference is that qualitative content analysis entails a data reduction process, focusing on selected aspects of data as opposed to grounded theory analysis which requires a high degree of interpretation and transformation of data.

In this study, data analysis began with Open (Substantive) and Axial Simultaneous Coding method (First and Second Cycle coding processes) which was employed right from Initial Coding to integrated data analysis. This was followed by Selective and Theoretical coding (putting the concepts into a theoretical framework) in order to suggest a substantive grounded theory (Strauss & Corbin, 1998; Holton 2007; Pleizier, 2010).

Open coding is the initial close word-by-word examination of the data for the purpose of developing provisional concepts. It involves creating a new code for a selected piece of text or quotation. Basically this process involves the breaking down, examining, comparing, conceptualising and categorising of data. It is the basic analytical step in the examination of qualitative data, the breaking of data into conceptual components. Through the process of constant comparison, these concepts are collapsed into categories. Variations in open coding include: line-by-line, sentence-by-sentence, paragraph-by-paragraph, or even interview-by-interview (De Vos, 1998).

In axial coding, the analysis is specifically focused on an emerging category. It puts “data back together in new ways by making connections between a category and its subcategories” (De Vos 1998). It is the process of making statements about the relationship between concepts (phenomena), conditions and actions/interactions. These relational statements are the sub-categories and are referred to as theoretical memos (Appendix E). This stage of Grounded Theory is termed ‘axial’ because coding occurs around the axis of the category, linking categories at the level of properties and dimensions (Strauss, 1987). During axial coding, the data that were fractured through open coding are re-constructed. In this process, categories are related to the sub-categories using a combination of deductive and inductive thinking (Borgatti, 2008) following the causal relationships paradigm of structure and process (Strauss and Corbin, 1998).

In selective coding the initial theoretical framework is created through the integration of the developed categories. Selective coding identifies the core category and systematically relates this category to the other categories. These relationships identified were validated using the paradigm model (Table 7). This model used data for the validation of linkages between categories and to further fill in categories that required refinement and further development. It enables the researcher to think systematically about the data (Strauss & Corbin 1990).

The core category refers to a category that recurs constantly in the data and has explanatory power that integrates all other categories, explaining the behaviour of the participants in resolving their main concern (Glaser & Strauss, 1967; Glaser, 1992). In other words, it is a systematic process of integrating, refining and relating the subcategories around core categories, resulting in the substantive theory. During selective coding the following takes place (De Vos 1998):

- identifying the story;
- moving from description to conceptualisation, for example, the storyline;
- making a choice between two or more salient phenomena;
- determining the properties and dimensions of the core category.

Theoretical coding is a process used to find relationships between codes and categories and has the potential to result in a theory and a set of theoretical propositions (Charmaz, 2006). It integrates the theory by weaving the fractured concepts into hypotheses that work together in a theory that explains the main concern of the participants.

### **Independent coder**

A sound and experienced independent coder who was willing to participate in the study was engaged to reduce bias. A consensus discussion was held between the researcher and the independent coder to determine intercoder variability (Bradley, Curry & Devers 2007; Lincoln & Guba, 1985) and very little evidence of bias was found in the analysis of the researcher. The researcher's findings were accepted.

### **5.6 Conclusion**

Having provided the grounded theory methodology as applied in the data analysis of this study the results of the data analysis is presented in chapter 6.

## CHAPTER 6

### RESULTS

#### 6.0 Introduction

This chapter presents the results of the data analysis, derived using the grounded theory methodology, articulated in two interrelated substantive categories that in turn explained the core category, core concern of the participants, the grounded theory suggest by the study as well as the theoretical propositions.

A profile of the study participants is shown in Table 6.

**Table 6: Profile of focus group participants (37)**

Participants' Label	Participants' Pseudonyms	Education	Occupation	Race	Religion
P 11	Mr. Booyesen	Tertiary	Researcher	Coloured	Christianity
P 12	Ms. Nhlahla	Tertiary	Nurse	Black	Christianity
P 13	Mr. Niru	Tertiary	Educator	Black	Christianity
P 14	Mr. Martins	Matric	Business	Coloured	Christianity
P 15	Mr. Ibusiso	Less matric	Admin officer	Black	Christianity
P 16	Mr. Mlodi	Matric	Laboratory technician	Black	Christianity
P 17	Mr. Dlomo	Matric	Secretary	Black	Christianity
P 21	Mrs. Starlyoun	Less Matric	Cashier	Black	Christianity
P 22	Mr. Koboku	Matric	Supervisor	Coloured	Christianity
P 23	Ms. Nlanedi	Tertiary	Nurse	Black	Christianity
P 24	Mr. Mark	Less matric	Security Officer	Black	Christianity
P 25	Mr. Franklin	Matric	Clerical officer	Black	Christianity
P 26	Mr. Cru	Tertiary	Administrator	Coloured	Christianity
P 27	Mr. Rojohno	Matric	Technician	Black	Christianity

<b>Participants' Label</b>	<b>Participants' Pseudonyms</b>	<b>Education</b>	<b>Occupation</b>	<b>Race</b>	<b>Religion</b>
P 28	Mr. Iza	Tertiary	Civil servant	Black	Christianity
P 29	Mr. Davidson	Less matric	Cashier	Coloured	Christianity
P 210	Mr. Bruceli	Matric	Sales rep	Coloured	Christianity
P 31	Dr. Ment	Tertiary	Dentist	Black	Christianity
P 32	Ms. Gel	Less matric	Orderly	Black	Christianity
P 33	Mrs. Dal	Tertiary	Dental nurse	White	Christianity
P 34	Mrs. Lia	Matric	DSA	Black	Christianity
P 35	Ms. Plege	Matric	Admin officer	Black	Christianity
P 36	Mrs. Nkoma	Less matric	Orderly	Black	Christianity
P 37	Mrs. Ala	Matric	DSA	White	Christianity
P 41	Mr. Braham	Matric	Teacher	Black	Islam
P 42	Mr. Ali	Less matric	Business	Black	Islam
P 43	Mr. Adio	Less matric	Trader	Black	Islam
P 44	Mr. Clobal	Tertiary	Accountant	Indian	Islam
P 45	Mr. Maah	Matric	Sale rep	Indian	Islam
P 46	Mr. Hoosein	Tertiary	Diplomat	Coloured	Islam
P 47	Mr. Deen	Tertiary	Student	Indian	Islam
P 51	Mr. Ido	Tertiary	Manager	Black	Christianity
P 52	Ms. Bong	Matric	Receptionist	Black	Christianity
P 53	Mrs Mar	Less matric	Cleaner	Black	Christianity
P 54	Mr. Clay	Less matric	Landscaper	Black	Christianity
P 55	Ms. Miri	Tertiary	Secretary	Black	Christianity
P 56	Ms. Lah	Matric	Nursing Aide	Black	Christianity

The two substantive categories identified were:

- i. adolescent identity crisis
- ii. adolescents' unhealthy behaviours and potential modifiers



The results are presented in four sections:

6.1 Adolescent identity crisis

6.2 Adolescents' unhealthy behaviours and potential modifiers

6.3 Core category

6.4 Mitigating adolescents' unhealthy behaviours

### **6.1 Adolescents identity crisis**

The participants in this study verbalized their perceptions and concern regarding adolescent identity crisis as illustrated in the excerpts below:

#### **6.1.1 The adolescent period**

*“Yes, adolescent, I will say is the.....the wild years of .... any human being”* [P1, 5<sup>th</sup> focus group]

*“Firstly is the behaviour, and the things that you experience as, as an adolescent. They are wild, because they have started to do things adult do, they become wild and uncontrollable.”* [P2 5<sup>th</sup> focus group].

*“....the adolescence stage is the stage when a child thinks now he can stand on their own of which they will need er, their parents as well....”* [P6, 5<sup>th</sup> focus group].

The participants in this study regarded the adolescent period as the ‘wild years’ when a child thinks he or she is sufficiently mature to make informed decisions regarding his/her future, often undermining parental roles.

#### **6.1.2 Adolescents see themselves as adults**

*“You are still a child, but you want to be like an adult hence, you end up making wrong decisions and being disrespectful and all that.”* [P1, 5<sup>th</sup> focus group].

*“Adolescent in my understanding, is a stage when a child starts to see things differently, of which they tend to see things that they think is right for them in a way of trying to do certain things like an adults .....” [P6, 5<sup>th</sup> focus group].*

*“...because adolescence stage is the stage where kids think they are adults of which they are not, they want try all the things that the adults do.” [P6, 5<sup>th</sup> focus group].*

The participants indicated that adolescents see themselves as adults, may come across as being disrespectful and do all things adults do, yet they are still seen as children who then end up making wrong decisions.

### **6.1.3 Adolescents prefer being socially acceptable among peers and friends**

*“And the peer pressure .... when you see your friends doing it you think it is the in thing and you will join in.” [P2, 1<sup>st</sup> focus group].*

*“Another thing is the type of friends that you keep around you. That is the most important thing because if you keep friends that are into drinking and smoking the chances are you will also end up smoking and drinking. If you keep friends that don't do those things, you won't do them because they will always be telling you no, this is not right let's not do it, let's not even try it.....” [P7, 1<sup>st</sup> focus group].*

*“Oftentimes it is peer pressure actually, for them to get involve in unhealthy behaviours, whatever, that might mean to them, be it smoking, be it taking drugs, be it drinking, partying, usually it is peer pressure. Because their friends are doing it, they also want to do it.” [P1, 3<sup>rd</sup> focus group].*

*“Even then if you can say to the child don't eat sweets there will be a friend there to give him sweets.” [P6, 3<sup>rd</sup> focus group].*

*“One of the main reasons why people get involved with gangsters, especially involved in smoking and drinking is because of peer pressure or because of the company they or because of the society that put it in good light.” [P7, 4<sup>th</sup> focus group].*

*“So I can say ..... seeing him doing that..... he is trying to impress people, to fit in the group of friends that he is with....” [P6, 5<sup>th</sup> focus group].*

In general the feeling was that adolescents succumb easily to peer pressure because they prefer to be socially acceptable among friends and peers.

#### **6.1.4 Adolescents like experimenting and imitating**

*“Ah, I think the reason is experimenting, seeing other people doing it and you what to try it out.” [P3, 2<sup>nd</sup> focus group].*

*“Yea, it would be kind of ... probably imitation as well because I want to imitate you smoking.....I start smoking, then it became a habit...you cannot pull yourself out of it.” [P 5, 2<sup>nd</sup> focus group].*

*“I think you know, most kids they like to experiment. You know they see somebody doing this and they say ok let me try it.” [P5, 3<sup>rd</sup> focus group].*

*“Sometimes when a child sees a friend doing something wrong he doesn't or she doesn't think that thing is wrong. Instead he wants to experiment that thing for him or for herself, thinking that, that thing is good.” [P6, 3<sup>rd</sup> focus group].*

*“As it is nowadays because of social media .... people see one person drinking and they think it looks cool or they see a person smoking, it looks cool so they start trying it, start experimenting, it gets to a level they become addicted now and they can't stop....” [P4, 4<sup>th</sup> focus group].*

*“Like they said .....it is a time you want to experiment, you want to you know, you want to do, you want to be like an adult.” [P1, 5<sup>th</sup> focus group].*

The participants claimed adolescents like experimenting and have the tendency to imitate unhealthy behaviours they consider cool.

### **6.1.5 Adolescents are impatient, naughty, rebellious, selfish and stubborn**

*“... they want to behave as if they are more clever than you,.... they just want to one-up you.... whenever they can....that is what they love to do.” [P1, 3<sup>rd</sup> focus group].*

*“Some of them I think they are selfish, some of them they are silly, some are naughty, some of them they are good...depends on the character .....” [P2, 3<sup>rd</sup> focus group].*

*“Adolescents are very rebellious and ....they don't care about anyone, anything. They just want what they want.....” [P6, 4<sup>th</sup> focus group].*

*“I think er, and, and, and ah, ah some adolescents are just naturally stubborn.” [P1, 5<sup>th</sup> focus group].*

*“...they went out without their parents' permission, lied to their parents that they were going to a birthday party....” [P3, 5<sup>th</sup> focus group].*

*“Adolescents are impatient.” [P4, 5<sup>th</sup> focus group].*

The consensus of the study participants was that adolescents are impatient, rebellious, selfish and stubborn. They opined that it is in the character of adolescents to be mischievous or naughty or one-up their parents and that they lie to get permission or approval for the bad things they do.

### **6.2 Adolescents' unhealthy behaviours and potential modifiers**

The excerpts below detail how study participants perceived adolescents' unhealthy behaviours and the potential modifiers.

### **6.2.1 Adolescent alcohol consumption**

*“Whatever money they get, instead of buying food, healthy food they will buy alcohol because the alcohol is means of escaping from the realities...” [P1, 1<sup>st</sup> focus group].*

*“Some of the kids around this area died on the weekend...they went out without their parents’ permission, lied to their parents that they were going to a birthday party....was not a birthday party, was all about alcohol and misusing alcohol,” [P3, 5<sup>th</sup> focus group].*

The participants expressed concern and displeasure over adolescents using any money they get to buy alcohol as means of escaping from the realities instead of buying healthy foods

### **6.2.2 Adolescent smoking**

*“Yes, it would be kind of imitation because they want to imitate you smoking....they start smoking, then it became a habit...cannot pull yourself out of it.” [P5, 2<sup>nd</sup> focus group].*

*“I have serious disagreements with my adolescent son. I tried to talk to him about not to smoke but he continues smoking and even ended up calling my neighbour to talk to him about smoking, that he must stop smoking. So he ended up leaving home because he doesn’t want to listen to anyone.” [P3, 5<sup>th</sup> focus group].*

Participants reported that adolescents probably start smoking by imitating elders and peers who smoke and then become addicted, wasting the money given to them by their parents for food.

### **6.2.3 Adolescent inappropriate sugar consumption**

*“..... put a cucumber and a lunch bar and ask the child to pick. It is a simple thing – lunch bar, obvious choice.” [P1, 1<sup>st</sup> focus group]*

*“ think I’m concerned with excessive intake of sugar because I know that my kids like sweets and chocolates and then that is the only one that I think I might be guilty of.” [P1, 3<sup>rd</sup> focus group].*

*“They will outgrow eating sugar and chocolate, I think they will outgrow it.” [P1, 3<sup>rd</sup> focus group].*

*“You haven’t outgrown coke.” [P7, 3<sup>rd</sup> focus group].*  
*“Youths prefer doing a lot sugary stuff, they eat sweets and ice creams.... and other sweet things.” [P1, 4<sup>th</sup> focus group].*

*“You cannot drink the tea my daughter is drinking. There is too much sugar.” [P2, 5<sup>th</sup> focus group].*

*“The sugar content is all about craving.... for sweets, chocolate, and if you, if you have self-esteem, you have confidence,... discipline... to abstain from it. [P5, 4<sup>th</sup> focus group].*

While the parents expressed their concern regarding adolescent inappropriate consumption of refined sugars, one parent suggested that his adolescent children will outgrow the excessive consumption of sugars.

#### **6.2.4 Adolescent inadequate fruit and vegetables consumption**

*“I think with vegetables, some of these .....are not very nice...they don’t taste nice. So, you can’t tell a child to eat them because they are not as nice as burgers....” [P2, 1<sup>st</sup> focus group].*

*“These days kids don’t like vegetables – they don’t like it. They hate it” [P4, 1<sup>st</sup> focus group].*

*“If you take vegetables and fruits you become healthy because they add vitamins nutrients, all the carbohydrates, proteins. You grow up healthy. Your, your teeth will be strong. You have calcium and everything. But if don’t take them, I mean you are not that healthy.” [P2, 1<sup>st</sup> focus group].*

*“For example, carrots have cleaning effect in your mouth but if you don’t know that...you will, you keep eating sweets and whatnot. You leave things that are healthy.....so the*

*disadvantage is that you are not eating something that is keeping you alive, that is keeping your sight functional well, that is cleaning you, that is giving you a good body, a good system. You know because some fruits, some vegetables, they help clean your body.*" [P7, 1<sup>st</sup> focus group].

*"Vegetables and fruits - that's based on how way you grew up. If you grew up eating a lot of vegetables and fruits you eat a lot."* [P3, 4<sup>th</sup> focus group]

*"....especially these kids when they growing up they are....don't eat fruits or veggies.... they are choosy ...."* [P2, 5<sup>th</sup> focus group].

The perceptions of some of the participants regarding adolescent inadequate fruit and vegetables consumption was that in spite of the nutritional/health values and the cleansing effects on the oral cavity, children of this age do not like consuming fruit and vegetables mainly on account of the taste in comparison with sweets and confectionaries. There was also a perception that it was dependent on how the adolescent was brought up - if an adolescent grew up eating fruits and vegetables, the adolescents was likely to remain so.

#### **6.2.5 Adolescent inadequate oral care**

*"....and with oral hygiene...I know they brush but they don't brush the way I want them to brush."* [P7, 3<sup>rd</sup> focus group].

*"Adolescents want to sleep. I know. I've got two daughters...everything is last minute - run to the bathroom, jump in the shower, use the toothbrush....everybody has a hectic lifestyle. They don't take enough time to brush their teeth and also to brush correctly."* [P1, 1<sup>st</sup> focus group].

*"Nobody takes the child and shows them how to do brush in circles, how to brush at the back. They watch somebody doing it and they think ok, oh that's what you do"* [P1, 1<sup>st</sup> focus group].

*“Like on TV, in movies or what not people are always in a hurry when they brush. What you see is what is what you do – but there has been no physical training, no proper training in technique ....” [P7, 1<sup>st</sup> focus group].*

*“I think may be because nowadays the adolescents sleep so late you know that by the time they get to bed at 2, 3 in the morning you are so tired you don’t worry about brushing your teeth, anything, your body is so drained, you jump into bed.” [P4, 4<sup>th</sup> focus group].*

*“But children from a young age...with teeth already are encouraged to .... be aware of dental health. For that reason children are encouraged to use a miswak or a toothbrush or toothpaste.....and to be aware of dental health.” [P6, 4<sup>th</sup> focus group].*

*“I think they don’t worry about brushing.....they don’t brush properly because of laziness.....” [P7, 4<sup>th</sup> focus group].*

The parents ascribed adolescent’s inadequate oral care to lack of training, laziness, waking up too late in the morning and/or brushing in a hurry among others. One participant noted that adolescent boys’ motivation for brushing their teeth is more associated preventing bad breath when they speak to the opposite sex and less related to the promotion of good oral health.

#### **6.2.6 Adolescents’ educational aspiration**

*“The children that are academically ambitious are focused and aware of the dangers, so they don’t allow themselves to be sucked in to these other things. They focus on studies and career.....Other kids are living for today, day by day.” [P1, 1<sup>st</sup> focus group].*

*“In my experience, children that have achieved academically don’t get involved in drinking and smoking while they are at school and university. They were very focused, they very dedicated and they had no time for all that kind of stuff....” [P1, 1<sup>st</sup> focus group].*



*“It also depends on the child because even though he is academically ambitious and he wants to read – If he wants fit in with his friends and they are smoking he will smoke.”* [P3, 3<sup>rd</sup> focus group].

*“If they are academically ambitious they probably have good habits like brushing their teeth regularly and looking after themselves...because they sort of know where they are going, what they want and so look after themselves.....”* [P7, 3<sup>rd</sup> focus group].

With regard to educational aspiration participants held different views. Some indicated that educational aspiration protects against unhealthy behaviours and naughtiness while others indicated otherwise.

### **6.2.7 Adolescents’ religiosity**

*“Religion doesn’t teach about brushing and hygiene... they just tell you cleanliness is next to godliness and that’s about it. It is not taught in the church, they don’t talk about tooth brushing, don’t teach about sugar. They just say follow a healthy lifestyle.”* [P1, 1<sup>st</sup> focus group].

*“...when you are a Christian you should not drink or smoke drugs or whatever .... is what we are taught in church every time to look after our health.”* [P4, 3<sup>rd</sup> focus group].

*“Religion, it depends on what religion you are involved in because there are many religions and some might even promote smoking. So to say that religion can be a good influence, it depends on what religion it is”. [P7, 3<sup>rd</sup> focus group].*

*“I’m a Christian. So I think, kids who grow up religious, who grow up believing, who grow up Christians, ... when it comes to this smoking and alcohol thing...because they are taught in church that .... you are not allowed to do this...even if they think of doing it they think no, but I can’t do it.”* [P5, 3<sup>rd</sup> focus group].

*“I think once again it depends on what religion because some religions for example don’t promote the eating of meat, they promote being a vegetarian... I think religion doesn’t*

*really play a major role in what kind of diet you're going to have, though there are some religions that make it important.*" [P7, 3<sup>rd</sup> focus group].

*"As for alcohol, obviously Islam is completely against it. Many reasons are mentioned but some of the main reasons is that alcohol affects the mind. Christianity and Judaism are also against alcohol use. And so from that point of view of religion... is completely, to stop the alcohol, alcoholism. As regards to smoking, it's forbidden or discouraged in Islam ... it causes harm to the body and generally speaking anything that causes harm to the body in Islam is disapproved."* [P7, 4<sup>th</sup> focus group].

Participants spoke from the perspective of their religion. Islam forbids alcohol consumption. Christianity discourages alcohol consumption and smoking but Christian parents reported that more of their adolescent children were involved with alcohol consumption, smoking and drug abuse. However, some participants stated that there are many different kinds of religions with varying views on behaviours.

#### **6.2.8 Adolescents' self-esteem**

Participants were in agreement that high self-esteem protects adolescents against unhealthy behaviours.

*"The only thing I want to say is that self-esteem enables an adolescent to have the ability to do what he feels is right and not what he feels is wrong and be able to overcome his inclinations and basically goes from reaction, do thing rationally instead of emotionally."* [P7, 4<sup>th</sup> focus group].

*"It does influence ....If they have got a low self-esteem, they will be unconcerned about hygiene, about drinking, smoking because they don't have a good impression of themselves. Somebody with high self-esteem will be concerned about their health, about their wellbeing and about what other people think of them. So it will affect their behaviour, that's for sure"* [P1, 1<sup>st</sup> focus group].

*“I think self-esteem is very important. If you don’t have self-esteem, people will make you do things that you don’t want to do because you will be trying to please everybody and that is impossible.” [P3, 2<sup>nd</sup> focus group].*

*“It all depends on the individual themselves. If you’ve got low self-esteem you will be influenced very quickly and you take to whatever the other person has but if you’ve high self-esteem, it will not be all that easy so it will come down to the person or individual, how you make your decisions.” [P6, 2<sup>nd</sup> focus group].*

*“People have habits to make them feel good and to prop up their self-esteem..like smoking, drugs, dagga and all that.... springs from wanting to boost self-esteem for most kids that do that.” [P1, 3<sup>rd</sup> focus group].*

*“I do think that low self-esteem will lead to drugs and drink because when they are on drugs they feel high ...feel they are all-powerful and can do anything. Even with drinking inhibitions are all lost, they are not shy anymore and they can do anything... [P3, 3<sup>rd</sup> focus group].*

*“Okay, I think that obviously, a child that has been taught to look after themselves, and you know eat healthy and have all those good habits is going to have a greater self-esteem than one who has not been taught that..... if someone who is got good self-esteem they will practice good behaviours.” [P7, 3<sup>rd</sup> focus group].*

*“And if a person has strong self-esteem and he knows what it is wrong, personally he can see that it is wrong, and then due his self, strong self-esteem he has the ability to stop him from doing the wrong thing and if he has low self-esteem, he feels weak. He very easily gives in to peer pressure because he wants to fit in.”*

The study participants were in agreement that high self-esteem protects adolescents against unhealthy behaviours.

### **6.2.9 Adolescents' propensity to cope with stress (SOC)**

*"I think...one who can cope up with stress, it is a very easy for him to do his things. He can brush his teeth, he knows what to do...is free from stress can be able to manage easily." [P7, 2<sup>nd</sup> focus group].*

*"If somebody can cope with stress ... they know the choices that they have to make ...if they can manage the stress without drinking or smoking, they are actually able to discern in a situation of what is good and what is bad and how can they handle it without having to.... smoke or drink." [P8, 2<sup>nd</sup> focus group].*

*"If the adolescent cannot cope with the stress may be the unhealthy behaviours will be used as a bulwark against the stress." [P1, 3<sup>rd</sup> focus group].*

*"Well if you can cope with stress then alcohol and drugs and smoking shouldn't affect you. It is saying you turned to smoking and drinking because you can't handle the stress. If you can deal with stress there is no reason for you to turn to alcohol and drugs." [P5, 4<sup>th</sup> focus group].*

*"I started smoking not because of stress, but it was because all my friends were doing it. It became like a social thing." [P7, 4<sup>th</sup> focus group].*

The participants were in agreement that propensity to cope with stress protects adolescents against unhealthy and risky behaviours. They were of the opinion that most of the adolescents use unhealthy behaviours as coping mechanism for stress, but did acknowledge that some adolescents who can cope with stress may still indulge in unhealthy behaviours because of peer pressure and wanting to fit in.

### **6.2.10 Adolescents' race/culture**

*"Different race groups eat different things....we are all from the same country, we are born here but everybody eat differently... because of the culture and the race you come from." [P1, 1<sup>st</sup> focus group].*

*“...people from certain cultures eat fruit or vegetables and stuff like that...” [P9, 2<sup>nd</sup> focus group].*

*“I don’t think race makes any difference if you’ve got the right religion. Even if you are in a neighbourhood that is difficult you make sure you bring up your children with the correct rules and regulations, the correct upbringing.” [P5, 4<sup>th</sup> focus group].*

*“I think religion dominates the personal space and the neighbourhood he comes from so whichever religion it is, the morals and values of that that religion propounds will have a stronger effect on the upbringing of the child than what race he is from or what neighbourhood he is from.” [P7, 4<sup>th</sup> focus group].*

The participants opined that apart from different races eating differently, race does not appear to play an important role when compared to religion in influencing adolescent’s attitude towards unhealthy behaviours.

#### **6.2.11 Parents as role models/ their unhealthy behaviours**

*“Look, if the parents are not the examples, kids learn by what they see more than what you tell them. You tell them don’t drink and don’t smoke but you drinking and smoking. Let me tell you, they are going to follow what they see and not what they hear.” [P1, 1<sup>st</sup> focus group].*

*“I’ve got a problem with sugar and was in hospital 2010 because I was consuming too much Coca-Cola. I was drinking three to four litres of Coca-Cola a day...this is not a good example .....” [P1, 1<sup>st</sup> focus group].*

*“Sometimes it is the family that we were born from. My father use to drink when I was a young boy, maybe also my mother, so as a child when I saw those things, I always thought when I grow up one day I will also do that. Drinking to me was something that you are supposed to do – is a normal thing when you are an adult.” [P6, 1<sup>st</sup> focus group].*

*“You have to be a right role model from when the child is small they look up at you as the parent. They, they imitate everything you do. So, if you do the right stuff the child will remember .....” [P10, 2<sup>nd</sup> focus group].*

*“You cannot say ‘smoking is bad for you, so don’t do it’, in the meantime ‘where is my cigarette’? It, it doesn’t work like this.” [P6, 4<sup>th</sup> focus group].*

*“If a person is been alcoholic, many a time you hear the story that the parents were drinking when they were a child.....so it has a complete culminating effect upon the child what the parents do, regardless of what it is.” [P7, 4<sup>th</sup> focus group].*

*“I also wanted to add about parents being a good role model to their child.....you have to practice what you preach.” [P1, 5<sup>th</sup> focus group].*

*“Some of the things adolescents do .... depends on the behaviour of the parents at home.” [P2, 5<sup>th</sup> focus group].*

*“Some you will find that the background from when they were growing make them think ...if a parent can do that why can’t I do that because adolescence stage is the stage where kids thinks they are adults of which they are not, so they will want try all the things that the adults do yea.” [P6, 5<sup>th</sup> focus group].*

There was a total agreement among the participants that parents’ unhealthy behaviours have significant effect on their adolescents’ tendency towards unhealthy behaviours because parents are powerful role models as their children emulate their characters and characteristics when they grow up to be adults and therefore, parents behaviours should be positively exemplary – “they should practice what they preach”. Kids learn by what they see more than what they hear and are told. A few participants disclosed that they practiced some unhealthy behaviours like excessive sugar consumption and smoking and were aware of the negative effects this may have on their children’s behaviours.

### 6.2.12 Adolescent upbringing/home environment

*“The best thing is if they are trained from small...if they don’t know what sugar taste like, they won’t miss it. If they eat vegetables and healthy food when they are small it becomes a natural thing ...but once you expose the child to the other side then you will see, quickly, the veggies will go away.” [P1, 1<sup>st</sup> focus group].*

*“I think it’s laziness. It’s all about convenience...it is easy to go to McDonald than to actually prepare a meal.” [P2, 1<sup>st</sup> focus group].*

*“I also think the problem is in the things we are saying are nice food, the things that we are eating today, what we are calling fancy food....this is not referring to our traditional foods that we grew up eating... natural foods. Now we are eating those things that comes out of machines.” [P6, 1<sup>st</sup> focus group]*

*“But nowadays you have kids that grow up eating McDonald, KFC, Nando’s, whatever, it is all fast foods and sweets, you have it all. But that is not healthy food. For some parents they think it is healthy ... at the end of the day if you don’t know the value of good food you will feed your children what you know and that will determine whether they will be healthy or not healthy.” [P7, 1<sup>st</sup> focus group].*

*“But I think diet is definitely something that the child grows up with and learns from the parents. So if the parent is eating healthy home cooked meals, they are going to do that but if a parent only eats take-aways and McDonalds and junk foods that is also what they are going to learn and eat.” [P7, 3<sup>rd</sup> focus group].*

*“Vegetables and fruits that is based on how you grew up.....if you grew up eating a lot of vegetables and fruits you eat a lot...the way you train your child is the way you will find him outside” [P3, 4<sup>th</sup> focus group].*

*“...upbringing matters, if you are small and your parents for example may be you were sitting in front of a TV, they be took away the sweets and put may be some carrots or something healthy there....” [P4, 4<sup>th</sup> focus group].*

*“I think when they are small parents don’t discipline them. They don’t cut down their sweet limits but leave them with a sweet cupboard and they become addicted. They don’t even learn about vegetables at that age and then later in life because they get caries then they say it is bad for your teeth from the sugar.” [P4, 4<sup>th</sup> focus group].*

*“Somebody with a proper upbringing has got a good support around him or her. So by the time you reach your adolescent age you would have formed certain behavioural patterns that will help you recognize unhealthy behaviours.” [P1, 5<sup>th</sup> focus group].*

*“What I can say with that kids behavior.... it depends on the home environment that they were growing up in.” [P2, 5<sup>th</sup> focus group].*

Study participants were unanimous regarding the important role of a good upbringing and the home environment in the formation and retention of healthy behaviours such as consumption of fruit/vegetables, unprocessed natural foods depending on the structures put in place at home. They also opined the pervasiveness of fast foods in today’s daily life.

#### **6.2.13 Neighbourhood/society and schools**

*“You, see we can try to teach healthy things at home ...but outside, when they at school they are eating chocolates, eating snacks.....” [P5, 1<sup>st</sup> focus group].*

*“So those are some of the things show in society....you are in a location, everyone is drinking, they look happy....that is what you are perceiving, people are enjoying themselves, but are unaware of the damage caused from drinking and smoking.” [P6, 1<sup>st</sup> focus group].*

*“If you stay in ekasi the percentage is high that you will end up drinking or smoking because there is no day that goes without people drinking at the tseshebeens ... it is freely available.” [P7, 1<sup>st</sup> focus group].*

*“... and school also. It depends at what school the child is. If the child is in a normal rough school...it can have effects on the child’s future also.” [P10, 2<sup>nd</sup> focus group].*



*“Even in most nursery schools they have packets of sweets they give to the children and I think that it definitely affects the emotion so children become very hyperactive and that can affect their concentration.” [P7, 3<sup>rd</sup> focus group].*

*“Even if you are in a neighbourhood that is difficult you make sure you bring up your children with the correct rules and regulations, the correct upbringing. The person who is got a good set of morals, what they going to do? They are going to make sure they live in an area which is conducive to bringing up children.....” [P5, 4<sup>th</sup> focus group].*

*“One of the main reasons why people get involved with gangsters, especially involved in smoking and drinking is because of peer pressure or because of the company they or because of the society that put it in good light.” [P7, 4<sup>th</sup> focus group].*

*“When it comes to the substance abuse, it depends on the environment that the child is living in and the neighbourhood that is living in....there are place where the use of substance is very high.” [P2, 5<sup>th</sup> focus group].*

Study participants highlighted the significant influence of neighbourhoods, societies and schools on adolescent attitudes towards unhealthy lifestyles. One participant commented though that it is possible to raise children properly in even ‘difficult’ neighbourhoods.

#### **6.2.14 Advertisements, marketing, negative mass and social media**

*“I think the young ones, they get bad habits because it is advertised everywhere. You see it in billboards....so they think is a good because it is being advertised everywhere.” [P2, 1<sup>st</sup> focus group].*

*“And marketing. Coke looks good until...” [P4, 1<sup>st</sup> focus group]. “And the way it is advertised – no-one advertises vegetables like that....what’s advertised is what attracts people.” [P7, 1<sup>st</sup> focus group].*

*“So only things that are being advertised are the sweets, the good things that taste nice....” [P7, 1<sup>st</sup> focus group].*

*“Like on TV, in the movies ....mostly what you see is what is what you do..”* [P7, 1<sup>st</sup> focus group]. *“The media is a big problem, social media.”* [P6, 2<sup>nd</sup> focus group].

*“As it is nowadays with social media .... people see one person drinking and smoking and they think it looks cool.... so they start trying it, start experimenting, it gets to a level they become addicted now and they can’t stop and they can get off.”* [P4, 4<sup>th</sup> focus group].

Advertising and marketing of unhealthy behaviours and products attract adolescents to such behaviours. The negative influences of mass and social media especially via the internet was also reported by study participant as a significant factor driving adolescents’ unhealthy behaviours.

#### **6.2.15 Availability, affordability of unhealthy products**

*“Unhealthy stuff is freely available number one....so they don’t even need to be influenced. ....Open the fridge and you find carbonated sugar drinks....open the cupboard there are sweets and biscuits. So as parents we promote it by buying these things and make it available. There are no restrictions in any shop, any child can ....buy a kilo of sweets and they won’t stop you, there is no restriction on unhealthy foods, you can buy what you want and nobody will stop you.”* [P1, 1<sup>st</sup> focus group].

*“It’s because there are sweets everywhere, the tuck shops are everywhere, always selling sweets.....”* [P1, 4<sup>th</sup> focus group].

*“I think we must look at affordability....it may be is all about priorities. Some people rather buy clothes and other things than fruit....they say it is expensive. But if you compare fruit and a pair of shoes, they will rather buy a pair shoes”* [P1, 4<sup>th</sup> focus group]

The study participants lament that some parents spoil their adolescents with too much spending money and that availability of unhealthy products at home and in the shops and their affordability attract adolescents to such products. They also indicated that eating unhealthy is also a matter of priority not affordability only.

### 6.3 Core category

The core category was conceptualized as “tame the taste buds and train the child positively from infancy through preadolescence” (Table 7) and was grounded in the interview data as illustrated below:

*“Nobody takes the child and shows them how to do brush in circles, how to brush at the back. They watch somebody doing it and they think okay, oh that’s what you do” [P1, 1<sup>st</sup> focus group].*

*“The best thing is if they are trained from small. If they don’t know what sugar taste like, they won’t miss it. And if the child is trained to eat healthy things it is not bad or is not non tasty because that’s all the child knows. But once you expose the child to the other side then you will see, quickly, the veggies will go away (laughter).” [P1, 1<sup>st</sup> focus group].*

*“So you see is now also about our taste buds not about the, the natural...” [P6, 1<sup>st</sup> focus group].*

*“I think it is more about mindset. You’ve got a choice. If you can afford to buy cigarettes, then you can afford to buy apples ..... it depends on what your body is craving for basically. ....some just say we are going to die anyway so I don’t care really.” [P6, 2<sup>nd</sup> focus group].*

*“Ok, I think that obviously if a child that has been taught to look after themselves, then they will eat healthy and have all those good habits and a greater self-esteem.....will practice good behaviours.” [P7, 3<sup>rd</sup> focus group].*

*“Charity begins at home. The way you train your child is the way you will find him outside” [P3, 4<sup>th</sup> focus group].*

*“So something must be done early because I think in my culture we must just tame it when it is still young.” [P4, 5<sup>th</sup> focus group].*

The core category describes the perception of parents of what should be done to mitigate adolescents' unhealthy behaviours. It was given expression to, by the study participants in terms of the following two metaphoric concepts:

- (1) Engendering the development of healthy behaviours from infancy
- (2) Providing enabling environments and reinforcement for the retention of healthy behaviours from early childhood through preadolescence

The present study suggests that these two concepts are interlinked and that their combined effects describe the core category that has the potential to mitigate adolescents' unhealthy behaviours. The core category was the central category that needed to be theorized about, how it relates to the other categories as validated using the paradigm below (Table 7).

**Table 7: Components of the paradigm model of this study**

<b>Component</b>	<b>Description</b>
Core category	Tame the taste buds and train the child positively from infancy through preadolescence
Causal condition	Poor oral health (bad breath, bleeding gums, caries, injuries, tooth loss)
Context	Adolescent unhealthy behaviours of alcohol consumption, smoking, inadequate consumption of fruit and vegetables, inappropriate consumption of sugar, inadequate toothbrushing, and psychosocial factors
Intervening conditions	Psychosocial factors of educational aspiration, propensity to cope with stress (SOC), religiosity, self-esteem
Action /interaction strategies	Parental, Government, NGOs, participation
Consequences	Good/poor oral health related quality of life

A paradigm is a philosophical or theoretical framework of any kind (Merriam-Webster, 2010). The component of the above paradigm explained:

**Core category** - the term indicates an extraordinary or remarkable thing. A core category indicates a problem, issue, an event, or a happening that is defined as being significant to respondents (Strauss and Corbin, 1996).

**Causal conditions** – are the events that lead to the development of the core category (Pandit, 1996).

**Context** - refers to the particular set of conditions and intervening conditions, the broader set of conditions, in which the phenomenon is couched (Pandit, 1996).

**Intervening conditions** - these conditions act to either facilitate or constrain the action/interaction strategies taken within a specific context. Intervening conditions can be thought of as the broad structural context pertaining to the phenomenon. May have influence by facilitating or constraining the action/ interaction strategies, in a particular context (Strauss and Corbin, 1996).

**Action /interaction strategies** – refer to the actions and responses that occur as the result of the phenomenon (Pandit, 1996). Action / interaction strategies are strategic or routine responses made by individuals or groups to issues, problems, happenings or events that arise under those conditions and are represented by the questions by whom and how (Strauss and Corbin, 1996).

**Consequences** - refers to outcomes, both intended and unintended, of actions and responses (Pandit, 1996). Are represented by questions as to what happens as a result of those actions/interactions or the failure of persons or groups to respond to situations by actions/interactions, which constitutes an important finding in and of itself (Strauss and Corbin, 1996).

## 6.4 Mitigating adolescents' unhealthy behaviours

This was the core concern of the interview participants and was conceptualised as a multifaceted construct grounded in the interview data and it had the following components:

### 6.4.1 Parental knowledge

*“Parents need to know first. Not every parent knows what is good, what is bad and what is right. A lot of parents teach children exactly what they know and a lot of time what they know is not the right thing. It all boils down to research and training and seeking the right advice.” [P1, 1<sup>st</sup> focus group].*

*“Nicotine damages and stains your enamel (causes cancers as well) if you don't practice proper dental hygiene. Alcohol as well causes problems when you are driving you lose control....” [P1, 1<sup>st</sup> focus group].*

*“If you eat vegetables and fruits you become healthy because they add vitamins nutrients, all the carbohydrates, proteins. You grow up healthy. Your teeth will be strong. You have calcium and everything.....” [P2, 1<sup>st</sup> focus group].*

*“If I don't know the value of or what good food is then you will feed them junk food” [P7, 1<sup>st</sup> focus group].*

*“And you find a child that grows up eating the natural healthy foods is much stronger and lives longer than the child who grows up eating these fast foods.” [P7, 1<sup>st</sup> focus group].*

*“If you have inadequate brushing, it will lead to tooth decay and you will lose your teeth.” [P3, 3<sup>rd</sup> focus group ].*

*“If you don't brush your teeth, your mouth will stink and then you will have gum recession and your teeth will fall out because your gums are weak and you have bacteria...” [P4, 3<sup>rd</sup> focus group]*

*“What I think, because there are natural sugars and there are sugars coming from companies. So for the natural sugar you can eat as much as you want but processed sugar from the companies have chemicals in them which are not good for your body.”* [P2, 4<sup>th</sup> focus group].

*“Too much sugar is very bad for the teeth and health and your chances of getting tooth decay are worse than one who takes little or not.”* [P5, 4<sup>th</sup> focus group].

*“Everything, in our religion teaches us balance....excess sugars leads to negative effects. But even sugars, you need a bit of sugar in your diet but everything needs a balance. Vegetable, fruit, natural, anything natural is encouraged.”* [P5, 4<sup>th</sup> focus group].

*“Tooth, if you don’t brush properly then you are going to be having plaque, keep building up there and will affect your gums, ... lose your teeth”* [P1, 5<sup>th</sup> focus group].

*“For not brushing properly, it can affect your teeth and your gums, even your, you will have a bad breath.”* [P2, 5<sup>th</sup> focus group].

The participants in the present study were knowledgeable regarding what constitutes unhealthy behaviours and what risk factors affect the teeth and gums even though most of them disclosed consuming large amounts of sugar and sugary drinks like Coke (Section 6.2.11 - P1, P7, 1<sup>st</sup> FG; P2, P4, 3<sup>rd</sup> FG), smoking (Section 6.2.11 – P7, 4<sup>th</sup> FG and P4, 5<sup>th</sup> FG) and consuming alcohol (Section 6.2.11 - P4, 2<sup>nd</sup> FG).

They felt that parents first need to be educated, aware and to know what unhealthy behaviours are to be good role models and to provide reasons to support what they say. Muslims claimed that they depend solely on their religion as their guide.

#### **6.4.2 Parent-child relationships/communication and parental support**

*“If their job keeps them too much at work, many hours, they have got no time for the kids. Also sometime, they have occupations that you do physical hard jobs, heavy work all day.”*

*You come back home, you really got no energy left to, to spend with kids and to train them.” [P1, 1<sup>st</sup> focus group].*

*“Because what I have learnt is, the more time you spend on your child, teaching them and giving them advice and help on what they want to know, most of it they hold on to it.” [P7, 1<sup>st</sup> focus group].*

*“Quality time and yes, parent should spent quality time with their kids... eys thatis very important” [P7, 1<sup>st</sup> focus group].*

*“When they say - you are telling me not to drink, why mustn't I drink? You must be equipped with all the correct answers. You need to do a lot of research to support what you are saying.....you need to arm yourself as much as possible with facts. Is not just a case of instructions.” [P8, 2<sup>nd</sup> focus group].*

*“The relationship between myself and my adolescent children is good and I believe that they trust me when I try to educate them” [P1, 3<sup>rd</sup> focus group].*

*“And when they need help they should ask, even if we need to seek professional help, we must provide as much help as we can afford as a family. We will stand by them and then not judge ....give them the opportunity to be able to overcome any issues.” [P1, 3<sup>rd</sup> focus group].*

*“I will encourage my children to be open, to speak to me about their issues and whatever problems they have...and the unhealthy behaviours in adolescents are no exception. They are free to communicate with me because they are growing up and therefore, they are going to have challenges. And therefore, they should not be shy of it.” [P1, 3<sup>rd</sup> focus group].*

*“When you are a parent you need to let your kids be free with you. They must tell you everything, their problems. You must cherish them in everything...it is helpful for them.” [P4, 3<sup>rd</sup> focus group].*



*“I think that it is important that we have a relationship that is open, that is not too authoritarian because it gives opportunity for children to open up to you and to let you know the troubles and problems that they might be having.” [P7, 3<sup>rd</sup> focus group].*

*“You need to be there for your kids and support them and try to help them, but it can be very challenging but you have to do your best.” [P7, 3<sup>rd</sup> focus group].*

*“Communication is vital especially when you have got experiences that are very difficult like drug or alcohol abuse.” [P7, 3<sup>rd</sup> focus group].*

*“...and also you have to be a kind of friend so that they can open up to you, they can talk to you instead of going to talk to outsiders that might give them bad advice.” [P1, 5<sup>th</sup> focus group].*

*“The role as a parent is to make them aware about the consequences of unhealthy behaviours and to do it properly... if you are going to tell a child do not smoke, you have to tell them about the dangers of smoking....they have to understand clearly....” [P1, 5<sup>th</sup> focus group].*

*“Sometimes they do things just to seek attention because they don’t get enough love at home and the attention they need. That is all I can say.” [P2, 5<sup>th</sup> focus group].*

*“You need to sit down with the child and showing the wrongs and the rights of life because they are still young and lacking knowledge.” [P4, 5<sup>th</sup> focus group].*

*“Try to be a friend to the child in order for the child knows that even if there is something she doesn’t understand outside he has a parent or she has a parent she that she can turn to.” [P6, 5<sup>th</sup> focus group].*

*“Ok,....then for self-esteem the parent also, must appreciate the child, tell the child how beautiful the child is. Give the love, support, everything. Try to be a friend to the child in order for the child knows that even there is something she doesn’t understand outside he has a parent or she has a parent she that she can turn to.” [P6, 5<sup>th</sup> focus group].*

The participants all agreed that parents should try to be friends and open to their adolescent children. They should appreciate and cherish them to build and enhance their self-esteem. Relationships should not be too authoritarian but close and good enough for the adolescents to trust them and be open to them and to listen and be receptive when their parents try to educate them instead of going to outsiders. While parents should not allow their adolescents to control them, they should give them love and attention and spend quality time with them by explaining the dangers of unhealthy behaviours continually. However, the parents lamented that certain occupations that require many hours of work or that involve hard physical jobs or heavy work load do not allow parents enough time with their adolescents or leave parents without energy to spend with them. Participants also indicated that parental support protects against adolescent unhealthy behaviours, but re-iterated that parents should stand by their adolescents and not judge them whatever happens. They should give them the opportunity to overcome any unhealthy behaviours even if they need to seek professional help to do so.

#### **6.4.3 Parental control and permissiveness**

*“I am not saying you must use excessive discipline with kids. It’s got to be balanced....while I am saying spare the rod and spoil the child...even in discipline there must be a balance.”* [P6, 4<sup>th</sup> focus group].

*“Some parents encourage their children to drink with them at home. For them it is better than having them drinking outside.”* [P1, 1<sup>st</sup> focus group].

*“I think that it is important that we have a relationship that is open because, and that is not too authoritarian because it gives opportunity for children to open up to you and to let you know the troubles and problems that they might be having. Because of peer pressure sometimes they can be very difficult and if you are a parent that is open to listening, then that can be helpful because then they are more accepting of what you have to tell them or teach them.”* [P7, 3<sup>rd</sup> focus group].

*“Forcing a child to do something sometimes has an opposite effects. They pick up habits from the parents” [P6, 4<sup>th</sup> focus group].*

Parental control, permissiveness, mollycoddling of adolescents, giving them spending money whenever they demand were cited as contributing to adolescents’ unhealthy behaviours. A participant recalled the Biblical verse ‘spare the rod and spoil the child’ but warned against excessive discipline, the use of authoritarian approach or force as this may be contra productive. A participant indicated that the child rights policies of the South African government make it difficult for parents to exercise proper authority over their adolescents.

#### **6.4.4 Challenges faced by parents of adolescents**

*“With me raising my children by myself....they don’t listen. They know everything.” [P3, 1<sup>st</sup> focus group].*

*“Once they leave your house, you basically have got no control. The decisions they make should be based on how they were trained at home but you’ve got no control.....” [P1, 1<sup>st</sup> focus group].*

*“The media is a big problem, social media.” [P6, 2<sup>nd</sup> focus group]. “They grow up too fast with this technology...they don’t listen.” [P5, 5<sup>th</sup> focus group].*

*“...we sacrifice a lot of money to send them to school, good schools and make sure that they have everything that they need. But then, because of this peer pressure in school they tend to change those values you have taught them.” [P8 2<sup>nd</sup> focus group].*

*“The challenges, many challenges, the biggest challenge is that, we don’t know what they want or we don’t understand them anymore.” [P5, 4<sup>th</sup> focus group].*

*“Protecting the child from evil influences especially in today’s world where the whole environment, the whole society pushes children towards things which are deemed to be negative especially by religious people is very challenging.” [P7, 4<sup>th</sup> focus group].*

*“They are exposed to too much, even the ones that have been brought up well ... still get tempted because there are so many unhealthy behaviours .... They are easily influenced, so the challenges are unbelievable.” [P1, 5<sup>th</sup> focus group].*

The participants stated the challenges they faced are many and daunting. They included peer pressure, negative influence of mass and social media, child rights law of South African government, adolescents not listening adults. Parents do not understand their adolescents, do not know what they want, they grow up too fast and they have their preferences which may clash with what their parents think is right for them. Once they are leave the home parents cannot protect them from bad influences out there.

#### **6.4.5 Who/what should assist parents?**

*“You need something like workshops to educate the people, to address these issues... . I will never know things, if I am sitting in my home and what is healthy eating what is not, I would just continue doing what I normally do....” [P7, 1<sup>st</sup> focus group].*

*“And where they, where they need help they should ask, even if we need to seek professional help, we will provide as much help as we can afford as a family.”*

*“The person who can help me is my wife. That is the only person that I can think of...because we are in it together.” [P1, 3<sup>rd</sup> focus group].*

*“I don’t know who can help me.” [P2, 3<sup>rd</sup> focus group].*

*“I think religion will help a lot.” [P3, 3<sup>rd</sup> focus group].*

*“Children’s unhealthy behaviour? I say religion can help them.” [P4, 3<sup>rd</sup> focus group].*

*“I think if me and my husband can sit down and solve it, then we, we can help them.” [P6, 3<sup>rd</sup> focus group].*

*“Having a child that smokes or is involved in alcohol you need real professional help, people who with it on daily basis because sometimes we might think we have the answers but we don’t.” [P7, 3<sup>rd</sup> focus group].*

*“I go to google. I think google has quite a lot of answers. Research and find information on google.” [P7, 3<sup>rd</sup> focus group].*

*“I say one of best possible places is to choose the right education, school ....and to link the child with Islamic education. Those children that are linked to Islamic education you find are more grounded and they live healthier and more conscious lives with regard to their surroundings.” [P5, 4<sup>th</sup> focus group].*

*“I think you need all the help that you can get ...it takes a village to raise a child.” [P1, 5<sup>th</sup> focus group].*

*“Neighbours, the church community, religious leaders and of course teachers in school.” [P1, 5<sup>th</sup> focus group].*

*“I think we need help as parents with each other to, to raise kids. We can’t raise these children alone.” [P2, 5<sup>th</sup> focus group].*

*“The government must also be there ..... visiting schools and teaching our kids at the early age so that they can grow up knowing the right thing and the wrongs because the teachers, I can say the teacher is like a father, a mistress is like a mother and she can and she is the best because she can stay with your child more than hours that you can stay with your child.” [P4, 5<sup>th</sup> focus group].*

*“Okay, I will say help from (coughs) the, yea church, Bible and the elderly neighbours, not neighbours, not all neighbours are good.” [P6, 5<sup>th</sup> focus group].*

Study participants indicated that their religion, religious leaders, elders as well as schools and teachers could assist parents in tackling adolescent unhealthy behaviours. They also mentioned spouses, family members, maids and neighbours.

The consensus was it takes a community, a village to raise a child and parents need one another in this task because no one parent can do it alone. The government, NGOs, seeking professional help, accessing google for information and attending related workshops were also mentioned as possible sources to seek help from.

## 6.5 Trustworthiness

The basic issue in relation to trustworthiness is how can a researcher persuade his or her audiences (including self) that the findings of a study are worth paying attention to or worth taking account of? “Trustworthiness is a method of establishing rigour in qualitative research without sacrificing the relevance” (Lincoln & Guba, 1985) and it includes:

- *Credibility*. The researcher created rapport with the participants to develop a trusting relationship throughout the study period. Interviews were conducted in English and in one instance in Sotho. The guiding questions were reviewed by a sociologist to ensure they adequately addressed the purpose and objectives of the study. An independent coder, a professor of community dentistry was also engaged to reduce bias.
- *Transferability*. This is the extent to which the findings of a study can be applied in other contexts or with other respondents (Babbie & Mouton 2001). It involves conscious effort on the part of the researcher to select subjects, elements, events or incidents in a non-random fashion to achieve the set goals. The researcher indeed selected information rich persons to meet the set goals of this study. The strategy applied in this study was purposive theoretical sampling in accordance with the guidelines outlined by Glaser and Strauss (1967).
- *Dependability*. The raw data was coded, audited and archived to allow for checking of findings against the raw data when the need arose. The data analysis protocol was developed according to Tesch’s approach (Appendix D) and data analysis decisions were written down in the audit trail as the analysis progressed.
- *Confirmability*. As alluded to above, an audit trail was developed.

## CHAPTER 7

### DISCUSSION

#### 7.0 Introduction

The specific objectives of this study were to explore parents' knowledge regarding the health compromising behaviours viz. alcohol consumption, smoking, inadequate consumption of fruit and non-starchy vegetables, inappropriate consumption of refined sugars and inadequate/infrequent toothbrushing that affect oral health of adolescents in Gauteng Province of South Africa and to assess parents' understanding of how the psychosocial factors of educational aspiration, religiosity, self-esteem and SOC (propensity to cope with stress) influence the aforementioned health compromising behaviours as well as to explore parents' views on how to address the challenges associated with the five health compromising behaviours among adolescents.

The parents in this study regarded the adolescent period as the 'wild years' when a child thinks he or she is sufficiently mature to make informed decisions regarding his/her future, often undermining parental roles, hence they frequently end up making wrong decisions. They indicated that adolescents see themselves as adults and may come across as being disrespectful. They do all things adults do while they are yet children. They also, opined that adolescents succumb easily to peer pressure. The consensus of the study parents was that adolescents are impatient, rebellious, selfish and stubborn. They indicated that it is in the character of adolescents to be mischievous or naughty, to one-up their parents and that they lie to get permission or approval for the bad things they do. In this chapter parents' perception of adolescents' unhealthy behaviours, the substantive grounded theory are discussed along with theoretical propositions of the four sections below:

7.1 Adolescent unhealthy behaviours and potential modifiers

7.2 Tame the taste buds and train the child positively from infancy through preadolescence

7.3 Mitigating adolescents' unhealthy behaviours

7.4 Theoretical propositions

## **7.1 Adolescent unhealthy behaviours and potential modifiers**

### ***Adolescent alcohol consumption***

The parents in this study expressed their concern and displeasure over adolescents using money to buy alcohol as means of escaping from the realities instead of buying healthy foods. This concern among parents in Gauteng Province is a reflection of the reality as the 2<sup>nd</sup> South African National Youth Risk Behaviour Survey of 2008 reports that adolescent learners who have ever used alcohol in Gauteng Province is 65.1% compared to the national average figure of 49.6% and 11.9% of adolescent learners reports having had their first drink before the age of thirteen years (Reddy *et al.*, 2010).

### ***Adolescent smoking***

In this study the parents asserted that adolescents probably start smoking by imitating those who smoke and/or by experimenting with cigarettes. They later become addicted, using money given to them for food but were not willing to stop smoking. The Centre for Disease Control and Prevention (1994) has reported that most adult smokers started experimenting with cigarettes or began smoking as adolescents. Imitation is most likely out of curiosity as curiosity is a significant characteristic of adolescent development that frequently expresses itself in disapproved ways. Other probable reasons why adolescents imitate those who smoke are the various attractions such as its association with maturity, glamour, and friendship as well as the seeming pleasure it offers those who overcome the initial body's revulsion to the pharmacological contents of cigarette smoke. Their unwillingness to stop is possibly due to addiction to nicotine, especially when reinforced by easy availability of cigarettes, perceived positive associations and the belief that quitting is terribly difficult (Chapman, 1995).

### ***Adolescent inappropriate sugar consumption***

The parents that participated in this study expressed their concern regarding the inappropriate consumption of refined sugars by adolescents. This concern is consistent with an earlier one in a study which reported an increased consumption of soft drinks and sweets among adolescents in preference to the more nutritional advantageous meals of fruits and vegetables (Currie *et al.*,



2004) with implications for caries formation. According to Reddy *et al.* (2010), in South Africa, 50.3% of adolescent learners drink sweet cool drinks and 42.6% eat cakes and/or biscuits often with no significant variation in gender.

Parents accepted natural sugars, but reported that refined sugars cause diseases. This statement is in line with the report of Frances *et al.* (2000), that the frequency and amount of NMES which are found in table sugar, confectionery, soft drinks, biscuits, honey, cakes, sweets, chocolate and fruit juice is strongly associated with caries formation and periodontal diseases. Brushing teeth after eating sugary food may not prevent the harmful effects. Rather, it is better to brush before a sugary meal or snack to remove plaque, reduce the bacteria and hence the quantity of acid production (Frances *et al.*, 2000).

### ***Adolescent inadequate fruit and vegetables consumption***

The perceptions of some of the parents in this study regarding adolescent inadequate fruit and vegetables consumption was that in spite of the nutritional/health values and the cleansing effects on the oral cavity, children of this age do not like consuming fruit and vegetables because they do not taste nice when compared to other fast foods that are available to them. This confirms Vorster, Love & Browner (2001) assertion that South African adolescents consume relatively low fruit and vegetables despite of the development of food-based dietary guidelines.

This situation may be improved if parents consume fruit and vegetables regularly at home. Parents' fruit and vegetable consumption is the strongest predictor of a child's consumption of these foods. There are two main ways parents' modelling can increase a child's consumption of fruit and vegetables. Observation could change behaviours directly or frequent provision of fruits and vegetables at meals could increase the possibility of consumption thereby promoting liking through increased taste exposure (Wardle & Cooke, 2008). Parents need to be active and positive role models by eating a wide variety of foods and consuming fruits and vegetables regularly. In addition, parents can expose their children to fruits and vegetables through movies, books, or gardening (Gibson *et al.* (2012).

Some participants reported that allergies to certain fruits and vegetables are the reasons why it is not eaten. This claim is real but uncommon. A food allergy is an abnormal immune response to food. The signs and symptoms may range from mild to severe which may include itchiness, swelling of the tongue, vomiting, diarrhea, hives, trouble breathing, or low blood pressure. This typically occurs within minutes to several hours of exposure. When the symptoms are severe it is known as anaphylaxis (National Institute of Allergy and Infectious Diseases, 2012). Food intolerance and food poisoning are different from food allergy. A type of food allergy known as oral allergic syndrome is characterized by a cluster of allergic reactions in the mouth in response to eating certain (usually fresh) fruits, nuts, and vegetables that typically develops with hay fever (Kelava *et al.*, 2014).

### ***Adolescent inadequate oral care***

The parents ascribed adolescent inadequate oral care to lack of time, laziness, waking up late in the morning and/or brushing in a hurry, overindulgence in video games and television among others. The parents claimed that nobody spends time to teach or train them how to brush properly. Brushing thoroughly, twice a day with fluoridated dentifrice is an important oral self-care activity known to be associated with lower risk of dental caries (Nguyen *et al.*, 2008) and periodontal disease (Lang, Ronis & Farghaly, 1995). However, it is suggested that adolescents' psychological predisposition and family environment are likely to significantly influence their tooth-brushing behaviour (Ayo-Yusuf, Reddy & van den Borne, 2009; Duijster *et al.*, 2015).

A parent noted that adolescent boys' motivation for brushing their teeth is more associated with not having bad breath when they speak to the opposite sex and less related to the promotion of oral health. This is consistent with the findings of some studies that tooth brushing during adolescence is mostly related to cleanliness and appearance (cosmetic or aesthetic reasons), and less related to the promotion of oral health (Regis, Macgregor & Balding, 1994; Dorri, Sheiham & Watt, 2009; Ayo-Yusuf & Booyens, 2011). Of the three possible reasons that could motivate an adolescent to brush namely, concerns about personal hygiene, a desire for grooming and a desire for good health (Hodge, Holloway & Bell, 1983; Dorri, Sheiham & Watt, 2009), the desire for good health would appear to be the least.

Another factor that is associated with adolescent oral health care is the quality and quantity of peer social network. In Iran, the frequency of toothbrushing among adolescents is strongly related to the quality and quantity of peer social networks. Nonetheless, the quality of peer social networks has a stronger association than quantity of peer social networks with the frequency of toothbrushing (Dorri, Sheiham & Watt, 2010). It must be emphasized here though, that adequate removal of dental plaque has more to do with the quality of brushing rather than its frequency (Puscasu *et al.*, 2007).

## **Potential modifiers**

### *Adolescents' educational aspiration*

Parents in this study held different views with regard to educational aspirations as a potential modifier in respect of adolescents' unhealthy behaviours. Some indicated that educational aspiration protects against unhealthy behaviours and naughtiness while others indicated otherwise. However, from extant literature, adolescents' educational aspiration indicates relationships in the direction of more health-enhancing and less health-compromising behaviours among those planning higher education (Friestad & Klepp, 2006). This association may be explained by one's ability and motivation to work hard to attain goals including higher education or healthier body. On the other hand, low educational aspiration is associated with health compromising behaviours such as inadequate/infrequent toothbrushing (Koivusilta *et al.*, 2003). Even a previous study demonstrates that adolescents who are not satisfied with life and school are less likely to display frequent brushing behaviour (Honkala, Honkala & Al-Sahli, 2007).

### *Adolescents' religiosity*

The parents spoke from the perspective of their religion. Islam forbids alcohol consumption. Christianity discourages alcohol consumption and smoking, and Christian parents reported more adolescents' involvement in alcohol consumption, smoking and drug abuse. On the positive side, many health compromising behaviours are directly addressed in many religious moral codes. They are opposed to the negative life styles (smoking, alcohol consumption, substance abuse, poor diet,) that are also health risks and health compromising (Donahue & Benson 1995).

There are differences, and some religious groups place emphasis on drug abuse (Lorch & Hughes, 1988). While Christian denominations discourage the excessive use of alcohol, other denominations and Islam forbid its use altogether. Christianity and Islam also discourage the use of tobacco. It is conceivable that those who describe themselves as being religious whether they belong to Christianity or Islam feel greater than average pressure to demonstrate more "socially desirable" characteristics in these areas (Donahue & Benson 1995).

Research investigating the relationship between religious commitment and drug use consistently indicates that adolescents who are seriously involved in a religion that discourages the use of drugs are more likely to abstain from drug use than those who are not committed members of such a religious organisation. Moreover, among users, religious adolescents belonging to a religion that is against drugs are less likely than non-religious adolescents to use drugs heavily (Lorch & Hughes, 1985; Gorsuch, 1988; Payne *et al.*, 1991).

Furthermore, Buddhism, Christianity, Islam and Judaism strongly emphasize cleanliness because of their belief that cleanliness is next to Godliness. The Muslim parents pointed out that Islam gives advice in the *hadith* on oral hygiene, recommending the cleaning of teeth with a *miswak* before prayers. The Bible also emphasizes the importance of training a child - 'train up a child in the way he/she should go and when he/she grows up, he/she will not depart from it'.

As indicated earlier, Wallace and Williams' (1997) socialization influence model hypothesizes that religion operates as a key secondary socialization influence that impacts drug use. Therefore, in addition to the direct teachings against drugs at religious services, adolescents raised in religious homes are more likely to be exposed to parents and other relatives who follow such teachings. Thus, part of the explanation for less drug use among religiously involved adolescents may be that their families reinforce the religious structures against drug use and abuse. A further factor may simply be availability. Religious parents who do not drink, smoke, or use drugs are less likely to have these substances in their homes, thus reducing the opportunity for adolescents to experiment with them (Jessor & Jessor, 1977).

Peer group factors also operate in the influence of religiosity on adolescents' health behaviours. The dynamics operating within the family probably have their parallel in broader social contacts. Those who are strongly committed to a religion are more likely to associate with others holding

similar views. Thus, the strongly religious are less likely to belong to peer groups that encourage experimentation with cigarettes, alcohol, and other drugs and more likely to participate in peer networks and activities that do not involve drugs because their religion preach against them. Given the strong relationship between drug use by peers and an adolescent's own drug use, the norms of the peer group are especially important as predictors of whether a particular adolescent will start using drugs (Jessor & Jessor, 1977). For example, religion is found to be an important factor in the United States of America, affecting positively the age of onset of alcohol consumption. The importance of religion is further highlighted by the low alcohol consumptions in Muslim countries (Ahlstrom & Osterberg, 2005).

In general, religiosity, especially subjective religiosity is inversely correlated with health-compromising behaviours and positively associated with health enhancing behaviours (Oleckno & Blacconiere, 1991; Donahue & Benson, 1995). Although religious behaviours generally decline during adolescence, subjective religiousness is still widespread among adolescents (Gallup & Bezilla, 1992).

### *Adolescents' self-esteem*

All the parents in this study indicated that high self-esteem protects adolescents against unhealthy behaviours. They asserted that adolescents with high self-esteem will be concerned with their health and wellbeing. The ones without self-esteem will be influenced easily, will easily give in to pressure and do things they do not want to do, trying to please others or trying to fit in. The parents also stated that some adolescents do unhealthy things such as smoking and drugs to prop up their self-esteem. The parents' position is in agreement with a study that shows high self-esteem to be positively associated with eating healthily, non-smoking, and low alcohol use (Wiefferink *et al.*, 2006). Alamian and Paradis (2009) also assert that adolescents with high self-esteem are less likely to have multiple behavioural risk factors. Conceivably, adolescents who have low self-esteem are less likely to brush for cosmetic reasons as they have negative perception of their self-image (Ayo-Yusuf & Booyens, 2011).

### ***Adolescents' SOC (propensity to cope with stress)***

The parents were also in agreement that SOC protects adolescents against unhealthy behaviours because most of the adolescents use unhealthy behaviours as coping mechanism or as bulwarks against stress, although some adolescents who can cope with stress indulge in unhealthy behaviours such as smoking because it is like a social thing. This sentiment expressed by parents in this study is consistent with the findings of some studies that report significant association between SOC and health behaviours such as alcohol consumption (Midanik *et al.*, 1992), dietary habits (Larssen & Setterlind, 1990), smoking (Glanz, Maskarinec & Carlin, 2005) and quality/frequency of toothbrushing (Ayo-Yusuf, Reddy & van den Borne, 2009).

Apart from the above four potential modifiers stated in specific objectives, the study also revealed the following six potential modifiers that cannot be ignored and are therefore, incorporated in the discussion that follows.

### ***Adolescents' race/culture***

The parents opined that apart from different races eating differently, they did not perceive race as a dominant influence on adolescent's attitude towards unhealthy behaviours. With both acculturation and globalization there are changes in preferences for certain foods. These changes may differ by ethnic groups. For example, in the United States of America, first-generation of Asian and Latino adolescents consumed higher fruit and vegetables and lower soda than whites. With succeeding generations, the consumption of these items by Asians remains stable. In contrast, fruit and vegetables consumption by Latinos decreases while their soda consumption increases, so that by the third generation their nutrition has become poorer than that of whites (Allen, Elliott, Morales, Diamant, Hambarsoomian & Schuster, 2007). Although, culture is a dynamic construct because it changes over time, it still remains a significant influence over what adolescents consume because of familiarity, and perceived healthfulness. Culture has food beliefs around set meals and food has indeed, been both an expression of cultural identity and a means of preserving family and community unity (Bruss *et al.*, 2005; MacArthur, Anguiano & Gross, 2004).

### ***Parents as role models/ their unhealthy behaviours***

The parents in this study agreed that parents' unhealthy behaviours have significant effects on their adolescents' tendency towards unhealthy behaviours because parents are powerful role models as their children will like to be like them when they grow up to be adults (Bryant & Zimmerman, 2003; Kandel, Griesler & Hu, 2015). Parents should therefore, be positively exemplary. They should practice what they preach because an adolescent lifestyle pattern is influenced by parental role modeling, the child's environment and access to healthy foods. Parents shape the development of children's eating behaviours in a number of ways, but particularly through parental feeding practices (Kiefner-Burmeister *et al.*, 2014). This is because children learn more by what they see than what they hear and the messages are negated by what they see and adolescents have a tendency to model and mimic parental unhealthy behaviours. Even though these parents admitted partaking in some unhealthy behaviours like excessive sugar consumption, their views with regard to parents' unhealthy behaviours are consistent with the argument of Gibson *et al.* (2012) that parents' positive influences are vital for establishing healthy lifestyle behaviours in their adolescent. Two of the parents in this study smoked but did not consume alcohol while one smoked as well as consumed alcohol and some of them detest vegetables.

Another study indicates that parents who indulge in excessive alcohol consumption, smoking and drug use are more likely to raise adolescents who smoke, use alcohol and drugs (Morojele *et al.*, 2001) with increased odds of multiple health compromising behaviours (Alamian & Paradis, 2009). This argument is supported by the assertion that children model the behaviours of those around them, and when children are young, parents (and sometimes siblings) are the main role models in their lives (EUFIC, 2010). Therefore, adolescents are likely to adopt the behaviours of their parents and those around them.

### ***Adolescent upbringing/home environment***

The parents were unanimous regarding the role of upbringing and the home environment in the formation and retention of healthy behaviours such as consumption of fruit/vegetables and unprocessed natural foods or the consumption of processed and refined foods among adolescents, depending on the structures put in place at home. This statement is in line with the

assertion of Mitchell *et al.* (2013) that parents create the environment within which food is sourced, prepared, consumed, celebrated, resisted or refused. In much of the world, traditional diets high in complex carbohydrates and fiber have been replaced with high-fat, energy-dense diets; abandoning traditional diets rich in vegetables and cereal in favour of processed foods, sugary foods and drinks (Bruss *et al.*, 2005; Duijster *et al.*, 2015).

The parents also opined that laziness is a part of the problem as it easier to go for convenient fast foods and snacks than prepare a meal at home. While laziness may be a crucial factor, the increasing number of women in the labour force is as well associated with a dramatic shift in family eating habits with a decline in homemade family dinners and the emerging importance of snacks and fast foods due to poverty of time (Cutler, Glaeser & Shapiro, 2003). When families eat away from home more often, it means poorer food choices are modelled and fewer family meals are eaten at home, the opportune place for parents to offer a model of healthy eating behaviours (Benton, 2004). Furthermore, globalization is linked to fewer home cooked meals, more calories consumed in restaurants, increased snacking between meals (Bruss *et al.*, 2005). According to Wallace and Williams' (1997) socialization influence model, the family remains the primary and first socialization influence, and a continuing source of socialization into health values.

### ***Neighbourhood/society and schools***

Parents highlighted the significant influence of neighbourhoods, societies and schools on the adolescent attitude towards unhealthy which could either be negative or positive. On the negative side, for example, sharing among adolescents (for example chocolates) at school override the efforts of those parents who try to keep their adolescents on natural diets including fruit and vegetables. This observation is similar to the finding of another study that reported that children from immigrant Mexican households abandon traditional foods prepared at home in favour the higher-calorie foods, beverages, and snacks they consume at school (Dixon *et al.*, 2007).

Globalization has also found to be contributory in increasing availability of fast foods and sweets in schools (Dixon *et al.*, 2007; Bruss *et al.*, 2005). School snack lines, vending machines, and in-school stores typically offer less-than-optimal food choices, including sweetened soft drinks, fried chips, candies and other confectionaries (Duijster *et al.*, 2015).



This is similar to the findings of a Minnesota study that indicated that snack vending machines availability in schools are associated with a decrease in the consumption of fruits among seventh graders (Kubik *et al.*, 2003). The association between availability and consumption was even stronger for chocolates and other candies but not significantly associated with older learners (grades 9-10). On the other hand, the availability of fruits and vegetables in the school environment is positively associated with the consumption of these foods by younger learners (Rovner *et al.* 2011). As mentioned earlier the adolescent is exposed at school to many other adolescents from different backgrounds and upbringing. The period following the transition to high school is a particularly vulnerable stage when ‘at risk’ adolescents may become progressively influenced at school while at the same time experiencing reduced parental supervision at home (Department of Health & DrugScope, 2001b).

The parents opined that adolescents who grow up in neighbourhoods where alcohol is not easily available as in ‘shebeens’ (drinking parlours) which are ubiquitous in ‘ekasi’ (‘townships’ or ‘locations’) and where smoking is not rampant are less likely to get involved in these unhealthy behaviours. This is consistent with Leventhal and Brooks-Gunn (2004) assertion that neighbourhoods have profound influences on developmental trajectories of adolescents. Duijster *et al.*, (2015) also indicates that the consumption of sugary foods and drinks is influenced by the social environment. However, one parent indicated it is possible to raise children properly in difficult neighbourhoods with the correct rules and regulations and upbringing; but parents who care would normally seek to live in areas conducive for raising children.

### ***Advertisements, negative mass and social media***

Parents held the view that advertisements of unhealthy behaviours exerts an enormous influence on adolescents. Exposure to food-related advertisements is found to produce alterations in belief systems as to the desirability of foods high in calories and low in nutrient density (Powell, Szczypka & Chaloupka, 2007). Adolescents are exposed to advertisements for sweetened drinks, fast foods and high-caloric snacks (Duijster *et al.*, 2015). No one advertises vegetables whereas, what is advertised attracts people according to one of the parents in this study. Commercial advertising healthy food make up only 4% of the food advertisements shown during children’s viewing time (Dietz & Gortmaker, 1985). Another report cites television advertising as influencing adolescents to adopt unhealthy lifestyle choices and cigarettes and alcoholic (McGinnis, Gootman & Kraak, 2006) although not all television programmes are bad.

The negative mass and social media influence via the internet was also reported by parents as a significant factor driving adolescents' unhealthy behaviours. This is consistent with the finding of Donahue, Haskins and Nightingale (2008) in their study which indicates that parents are worried about their adolescent children drowning in media messages, especially in respect of negative health behaviours that threaten their health and well-being because adolescent media use has exploded. In Canada for example, the average adolescent will have spent more time watching television than in the classroom by his/her high school graduation (Johnson *et al.*, 2002). Furthermore, Villani (2001) asserts that the primary effects of media exposure on adolescents are increased high risk behaviours, including alcohol and tobacco use. A study suggests that advertising increases beer consumption (Strasburger, 1993) and in countries such as Sweden, a ban on alcohol advertising leads to a decline in alcohol consumption (Romelsjo, 1987). The influence of the media and passive advertisements or passive promotions on the psychosocial development of adolescents is indeed profound (Dixon *et al.*, 2007) but on the positive side, parents can expose their children to fruits and vegetables and other health enhancing behaviours through selected movies (Gibson *et al.* (2012).

### ***Availability, affordability and marketing of unhealthy products***

The parents also pointed out that giving too much spending money to adolescents, the easy availability of unhealthy products at home and in the shops, and their affordability attract adolescents to such products. Affordability, availability and the marketing of foods and ingredients, palatability, familiarity, and perceived healthfulness prompt some families to discard certain traditional foods and adopt novel foods (MacArthur, Anguiano & Gross, 2004; Duijster *et al.*, 2015). The foods high in fat and refined sugars are cheaper per unit energy when compared with foods rich in protective nutrients such as fruits and vegetables (Andrieu, Darmon & Drewnowski, 2006) although, some parents indicated that eating healthy is also a matter of priority and not affordability only.

## **7.2 Tame the taste buds and train the child positively from infancy through preadolescence**

This was the core category expressing the perceptions of parents on how to address their main concern of mitigating adolescents' unhealthy behaviours and will be discussed in two sections.

### *Engendering the development of health enhancing behaviours from infancy*

Parents' realization and ability to tame the taste buds of their growing infants, train and nurture their mindsets (indoctrination) through early childhood and preadolescence should help in the development and retention of health enhancing behaviours into adolescence, especially with the provision of enabling environment and needed support structures. This view expressed by the parents in this study supports an earlier report which states that eating habits formed during childhood are likely to track into adolescence (MacPherson Montgomery & Nichaman, 1995; Gillman *et al.*, 2000) and taste preferences is a major consideration (Levin *et al.*, 2009).

Infants have innate preferences towards certain taste qualities and dislikes of other tastes (EUFIC, 2011). Infants prefer sweet-tasting foods and reject foods that do not taste nicely such as certain vegetables. This reflects an evolutionary response that was historically useful because the sweet taste signalled sources of energy (e.g. the breastmilk, their first source of calories), while bitter tastes signalled foods that might be toxic because they contrast the sweet taste energy foods. However, some researchers suggest that infants begin to accept bitter tastes around the age of 14–180 days (Mennella & Beauchamp, 1996).

As children grow up, they may refuse certain foods and become picky about foods. A reluctance to try new foods is called neophobia (Gibson *et al.*, 2012). Neophobia seems to be minimal around six months of age, so infants may be more willing to try new foods at this age (Mennella & Beauchamp, 1996). This presents many challenges for parents, and they respond in a variety of ways. Some give their children what they want to pacify them and end up encouraging inappropriate consumption of sugars. However, neophobia can often be overcome in children who have positive role models. Children are more likely to try unfamiliar foods if they have observed someone else eating them. In addition, when parents take a bite of their children's food and show signs of enjoyment, children are more likely to try the food (Wardle & Cooke, 2008). Parents may also see better results from offering a variety of healthy foods containing for example, fruit and vegetables from a young age and repeated exposures to these foods even if the child does not like them at first (EUFIC, 2010) promote liking through increased taste exposures (Wardle & Cooke, 2008).

These eating habits and other health enhancing behaviours formed in infancy through preadolescent are likely to track into adolescence and adulthood with their health benefits. Indeed, the influence of the family continues throughout adolescence and throughout the life-course of the individual to varying degrees.

***Providing enabling environment and reinforcement for the retention of health enhancing behaviours***

Continuous exposure of children to health enhancing behaviours and continuous emphasis against health compromising behaviours from early childhood through preadolescence, from the home through the school system should help in the retention of health enhancing behaviours among adolescents asserted the parents in this study. Adolescents are likely to develop healthy eating habits if they are continually offered a variety of foods starting at a young age and repeated exposure to health foods even if they do not like them at first (EUFIC, 2010). This is important because early childhood, infancy, and even prenatal experiences appear to have long-term consequences for health because they influence the biological mechanisms and there are also sociocultural consequences of these experiences (National Research Council, 2000).

The challenges of raising children to adopt healthy eating behaviours may seem daunting the parents in this study opined, but it does not have to be. Most importantly, parents and school authorities should expose children to a wide variety of health foods starting at an early age. Usually children reject certain foods because they are new to them. It may take several exposures before they develop a liking to these initially seemingly unpalatable foods. The exact number of exposures needed depends on a number of factors including the age of the child and novelty of the food, and previous exposures to new flavours. One exposure might be enough for some children, but others might require repeated exposure. Notably, the way fruits and vegetables look on the plate influences the likelihood that children will try them, so parent should be innovative and creative in their efforts to encourage their children to eat healthy (Gibson *et al.*, 2012).

Furthermore, adolescence provides another important period for promoting healthy behaviours. Many of the behaviours associated with adult morbidities and even mortality, such as cigarette smoking, alcohol and drug abuse, aggressive responses to stress often begin in adolescence.

Adolescents, in general, are very curious hence, this period of life provides opportunities to promote good health and to involve them in decision making about themselves. Effective early interventions through reinforcements can prevent the onset of health-compromising behaviours and can work to prevent their becoming less firmly established as life-long patterns (Millstein, Petersen & Nightingale, 1993).

### **7.3 Mitigating adolescents' unhealthy behaviours**

This was the core concern of parents regarding what should be done specifically to mitigate the five adolescent unhealthy behaviours. Mitigating adolescents' unhealthy behaviours is discussed under five sections.

#### ***Parental knowledge***

The adolescent stage is attained through integration where learning of skills and competencies is a process. It is an experimental and exploratory stage when adolescents do things without caution [Section 6.1]. They are between two worlds, not really belonging to any. This is where the parents' knowledge about the adolescent period as well as unhealthy behaviours comes in to help their adolescents create the identity that will help them shape their future.

Parents were knowledgeable regarding what constitute unhealthy behaviours that affect the teeth and gums even though some admitted that they consumed a lot of sugar, smoked and consumed alcohol. The parents indicated that parents first need to know what unhealthy behaviours are before they can teach and advise their children. This opinion supports the finding of a study by Kiefner-Burmeister *et al.*, (2014) that parents shape the development of children's eating behaviours in a number of ways, but particularly through what they provide and teach. Similarly, tooth brushing behaviour is primarily located within the direct family environment, including parental knowledge and perceived importance (Duijster *et al.*, 2015). Researchers contend that parental knowledge, not monitoring, is the strongest predictor of outcome of adolescents' unhealthy behaviours (Fletcher, Steinberg & Williams-Wheeler, 2004; Willoughby & Hamza, 2011). Willoughby & Hamza (2011), further points out that higher parental knowledge predicted lowered adolescents unhealthy behaviours over time. Parental monitoring does influence adolescents' unhealthy behaviours, but this is an indirect effect, through parental knowledge.

Another reason why parents in the present study felt that they needed to be knowledgeable is for them to be able to provide explanations and evidence to support whatever they say. Laird and colleagues (2008) reported that adolescents who perceived their parents as being knowledgeable were less likely to associate with maladaptive peers and less likely to be influenced by such maladaptive peers into indulging in unhealthy behaviours. Peer involvement in risk-taking is found to be one of the strongest predictors of adolescent unhealthy behaviours (Boyer, 2006). However, such an association is mediated by parental knowledge (Wood *et al.*, 2004). Whereas some parents understand quite well what they should be teaching and feeding their children, they do not know how to encourage their children to eat healthily and avoid unhealthy behaviours (Schwartz *et al.*, 2011). They lack practical strategies on how to achieve this.

### ***Parent-child relationship/communication and parental support***

Goetsch and Davis (2010) define communication as the transfer of a message (information, idea, emotion, intent and feeling or something else) that is both received and understood using words, sounds, signs or behaviour. Communication is the bedrock of a healthy relationship and in this study, the parents all agreed that parents should take time to explain the dangers of unhealthy behaviours continually, and not just a matter of giving instructions they contended. This assertion supports a similar argument by Polan and Taylor (2003) in their publication on human development and health promotion. Parents should also give love and attention to their adolescents and not be too authoritarian but try to be friends and open to them, spend quality time with them. They should appreciate and cherish their adolescents in order to help to build and enhance their self-esteem. This will help their relationships to be close and good enough for the adolescents to trust them and be open to them even with issues they are not proud of, to listen and be receptive when their parents try to educate them instead of going to outsiders. This understanding is consistent with the findings of previous studies suggesting adolescents who feel a lack of parental warmth, love or care are more likely to report low self-esteem, alcohol problems, drug use and other risky behaviours (Willoughby & Hamza, 2011; Resnick, 1997).

Another study by Howard & Medway (2004) points out that securely attached adolescents are less likely to engage in alcohol, drug use and other risky behaviours. However, the parents in this study lamented that certain occupations that require many hours of work or that involve hard

physical jobs or heavy work load do not allow parents enough time with their adolescents or leave the parents without energy to spend with them. At any rate, parents should not allow their adolescents to control them the parents in this study also warned.

Parent-child relationship dictates the type of peer relationships an adolescent will form as well as the type of peers that adolescents feel comfortable and safe associating with (Ellis, Rogoff & Cramer, 1981); and adolescent disclosure is a very important contributor (Waizenhofer et al., 2004; Willoughby & Hamza, 2011). Adolescent disclosure refers to adolescents voluntarily disclosing information to their parents about their behaviours, whereabouts and friends, without their parents having to actively solicit the information.

Parents in the present study perceived that parental support protects against adolescent unhealthy behaviours and helps them out of bad behaviours. They maintained that parents should stand by their adolescents and not judge them whatever happens but give them the opportunity to be able to overcome any of the unhealthy behaviours even if they need to seek professional help. Many studies state that apart from strong parent-child relationships and attachments to parents, another parental factor that helps adolescents to make healthy choices is parental support (Whitbeck *et al.*, 1992; Luster & Small, 1994; Miller *et al.*, 1997). This is because high levels of parental support help adolescents feel positive about themselves.

In summary, three key parental variables were perceived to foster adolescent disclosure which is directly related to less indulgence in unhealthy behaviour among adolescents. The first parental variable is promoting a warm and caring relationship with their adolescent children. Adolescents need to feel that disclosing to their parents is a safe and easy thing to do and that their parents will listen and respond with sensitivity when they decide to disclose their issues and problems. This argument supports a similar finding by Willoughby & Hamza (2011) that parents should make their adolescents feel safe and free to disclose issues to them no matter what. The second parental variable is organising regular joint family fun activities that adolescents would be happy to partake in. Ease of communication between adolescents and parents/guardians is enhanced by the quality of joint family activities, including family mealtimes (Fiese, 2006). The third parental variable is parental control, which involves setting reasonable restrictions and rules for adolescents' activities and whereabouts.

### ***Parental control and permissiveness***

Parents in the present study reported that lack of parental control, permissiveness, mollycoddling of adolescents and acquiescing to their demands contribute to adolescents' unhealthy behaviours. The lack of parent control, permissiveness or inability to exercise authority over adolescents particularly among grandparents or older members of the family as a result old age, is reported in a study by Maliki (2012).

The current child rights policies of the South African government were also cited as a hindrance to parents exercising proper authority over their adolescent children. This assertion supports an earlier study by Paruk *et al.*, (2005). In another study conducted by Ncube & Ross (2010) parents lament they are unable to control their adolescents with the abolition of corporal punishment because in terms of the South African Children's Act. One Christian parent recalled the Biblical verse, 'spare the rod and spoil the child' but warned against excessive discipline, use of authoritarian approach or force.

Parents frowned at the idea of adolescents drinking alcohol at home. Komro *et al.* (2007) in a study of 6th, 7th, and 8th graders found that students whose parents allowed them to drink alcohol at home and/or provide them with alcohol, experienced the steepest escalation in drinking. Another study suggests that adolescents who are allowed to drink alcohol at home drink alcohol more heavily outside of the home (van der Vorst *et al.*, 2010) and parental provision of alcohol serves as a direct risk factor for excessive alcohol drinking, as is the case where parents provide alcohol for parties attended or hosted by their adolescents. In contrast, adolescents are less likely to drink heavily if they live in homes where parents have specific rules against drinking alcohol at a young age, who themselves also drink responsibly (van der Vorst *et al.*, 2006). However, not all studies suggest that parental provision of alcohol to adolescents leads to trouble. For example, a study indicates that drinking with a parent in the proper context (such as a sip of alcohol at an important family function) can be a protective factor against excessive alcohol drinking (Foley *et al.*, 2004). Altogether, the literature suggests that permissive attitudes toward adolescent alcohol drinking, particularly when combined with poor communication and unhealthy modeling, can lead adolescents into unhealthy relationships with alcohol.



Parental control demonstrates indirect links to adolescents' unhealthy behaviours (Willoughby & Hamza, 2011) so parents should be active in their children's lives without being authoritarian or overbearing as this may be contra productive. It is acceptable that every parent is unique, but the ways in which each parent interacts with his or her adolescents is very important.

Parenting style can be broadly categorized into four styles:

- *Authoritarian* parents typically exert high control and discipline with low warmth and responsiveness. For example, they respond to unhealthy behaviours with punishment but let healthy behaviours go unnoticed.
- *Permissive* parents typically exert low control and discipline with high warmth and responsiveness. For example, they allow their adolescent drink alcohol and smoke and fail to correct unhealthy behaviours allowing them to do whatever they like.
- *Neglectful* parents exert low control and discipline as well as low warmth and responsiveness. For example, they show no interest at all in their adolescent health behaviours.
- *Authoritative* parents exert high control and discipline along with high warmth and responsiveness. For example, they offer praise for health enhancing behaviours and use thoughtful discipline and guidance to help avoid or recover from health compromising behaviours (Baumrind, 1978).

### ***Challenges faced by parents of adolescents***

The parents stated the challenges they faced are many and daunting and included not understanding their adolescents, and not knowing what they want. The influence of peer pressure, the negative influence of mass and social media, adolescents not listening to them or other adults, the hindering child rights law of South African government were cited as other challenges. Importantly they felt that once the adolescent left the home, they could no longer protect them from any bad influences.

Peer pressure is a major challenge to parents as several studies identify mediators of parenting influences to include peer influence. Peer involvement in risk-taking is found to be one of the strongest predictors of adolescent unhealthy behaviours (Dielman, Butchart & Shope, 1993; Sieving *et al.*, 2000; Boyer, 2006).

Parents challenges with respect to mass and social media is real because according to Donahue, Haskins and Nightingale (2008), their study indicates that parents are worried about their adolescent children drowning in media messages, especially in respect of negative health behaviours that threaten their health and well-being because adolescent media use has exploded.

One of the reasons parents do not understand their adolescents and their preferences is that they are not sure exactly what it is they want, but there may be a biological explanation. Adolescents' brains function differently from adults' when processing decisions and solving problems and may be why adolescents occasionally behave in an impatient, impulsive, irrational, or dangerous manner. At times, it seems like they do not think things through or fully consider the consequences of their actions. Scientists have identified a specific region of the brain called the amygdala which is responsible for instinctual reactions including fear and aggressive behaviour. This region develops early. However, the frontal cortex, the area of the brain that controls reasoning and helps us think before we act, develops later. Adolescents differ from adults in the way they behave, solve problems and make decisions because their actions are guided more by the amygdala and less by the frontal cortex of the brain. Studies show that the brain continues to mature and develop throughout childhood and adolescence and well into early adulthood hence adolescents act differently from adults (American Academy of Child and Adolescent Psychiatry, 2015). This is probably the reason adolescence is characterized by a strong tendency to experiment with risky behaviours and the courage for such experimentation is much greater at this stage than in later life (Miles *et al.*, 2001). Adolescents tend to hold the belief that, 'it cannot happen to me' and testing of limits is a common characteristic. These brain differences do not mean that adolescents cannot make good decisions or tell the difference between right and wrong. However, the awareness of these differences can help parents, teachers, advocates, and policy makers understand, anticipate, and manage the behaviours of adolescents.

### ***Who/what should assist parents?***

The parents in this study indicated that religion, religious leaders, elders as well as schools and teachers in particular (because the children spend more time at school than at home) could assist parents in tackling adolescent unhealthy behaviours. They also mentioned spouses, family members, and neighbours who could also assist. The consensus was that it takes a community, a village to raise a child and parents need one another in this task because no one parent can do it alone.

Significantly Christianity and Islam appear to address many health compromising behaviours. Religious codes are often opposed to the negative life styles (smoking, alcohol, substance abuse) that are also health risks and health compromising (Donahue & Benson 1995). School intervention was cited as a source help to mitigate health comprising behaviours among adolescents and is based on the popular opinion that adolescence is typically a period of diminishing parental influence as adolescents spend more time at school than at home on the average (Myers, 2000; Mestdag, 2005).

#### **7.4 Theoretical propositions**

Propositions illustrate the relationships between categories and their concepts as well as between categories themselves:

##### *Theoretical propositions related to the home environment/upbringing of adolescents*

1. Parents who lack knowledge regarding the characteristics of the adolescent period as well as what unhealthy behaviours entail cannot ‘tame the taste buds and train the child positively from infancy through preadolescence’ because they can only teach what they know.
2. The value system at home and upbringing contribute to adolescents’ indulgence in unhealthy behaviours.
3. Children who are introduced to and encouraged to consume little refined sugars and more of fruit and vegetables through ‘tame the taste buds and train the child positively from infancy through preadolescence’ are less likely to indulge in inappropriate consumption of refined sugars and inadequate consumption of fruit and vegetables.
4. Relationships between parents and adolescents should be close and good enough to make them listen and trust their parents to allow them ‘tame the taste buds and train the child positively from infancy through preadolescence’.

5. By being powerful role models, parents' unhealthy behaviours impact negatively on adolescents as they seem normative to the adolescents and their parents appear hypocritical when they attempt to 'tame the taste buds and train the child positively from infancy through preadolescence'.
6. Lack of parental appreciation, attention, control and support contribute to adolescents' indulgence in unhealthy behaviours.
7. Occupations that require many hours of work or that involve hard physical jobs or heavy work load do not allow parents enough time with their adolescents or leave parents without energy to spend to 'tame the taste buds and train the child positively from infancy through preadolescence'.

***Theoretical propositions related to adolescent psychosocial status***

8. Adolescents use unhealthy behaviours as coping mechanism or as bulwarks against stress but also to be acceptable socially.
9. Adolescents who have high SOC are less likely to indulge in alcohol, smoking and other unhealthy behaviours.
10. High self-esteem built through 'tame the taste buds and train the child positively from infancy through preadolescence' protects against unhealthy behaviours among adolescents.
11. Adolescents who are educationally ambitious are less likely to indulge in risky/unhealthy behaviours.

***Theoretical propositions related to adolescents' exposure to negative external influences***

12. Advertisements and marketing of unhealthy behaviours have negative influence on adolescents.

13. Exposure to negative mass and social media through the internet and TV as well as the environment or neighbourhood and the type of schools adolescents attend and the company and friends they keep, all have profound influence on their health behaviours.

#### ***Theoretical propositions related to culture and religion***

14. Adolescents from different race groups eat different things because of culture.
15. There are religions that forbid or discourage alcohol consumption and smoking.

#### ***Theoretical propositions related to governmental and NGOs participation***

16. Parents consider government child right policies as hindrances to exercising control over their adolescents.
17. The role of government and non-governmental organisations in mitigating adolescents' unhealthy behaviours is crucial especially the enactment and implementation of appropriate intervention policies by government.

### **7.5 Evaluation of the proposed theory**

This segment will evaluate the substantial theory derived from the data as part of the research process by engaging the substantive theory with two formal theories (Strauss, 1987) and four essential criteria according to Glasier (1978).

#### ***Engaging the substantive theory with formal theories***

The substantive theory is engaged with two formal theories related to adolescent development and upbringing. Urquhart (2009) refers to the grounded theory requirement to compare substantive theory with formal theory as theoretical integration. During comparison, the substantive theory is viewed through the lens of a formal theory. The principle behind comparing theories is to enhance “the internal validity, generalizability and the theoretical level of the theory building process” (Eisenhardt, 1989). Glaser (1978) suggests that comparisons with formal theory may be done along the process and structure of the theories.

The present thesis engages each formal theory by first presenting the formal theory with its underlying purpose and structure and relating it to the purpose and structure of the substantive theory. Secondly, the process of the formal theory is related to that of the substantive theory.

***Family system theory – parents initiate and provide life-long reinforcements***

The family system theory was introduced by Dr. Murray Bowen (Lesser & Pope 2007). It suggests that individuals in a family cannot be understood in isolation from one another but rather as part of their family. The family is an emotional unit. Families are systems of interconnected and interdependent individuals, none of whom can be understood in isolation. The family is considered a social system that adheres to most of the behavioural rules and assumptions that apply to all social systems. According to Bowen, a family is a system in which each member has a role to play and rules to respect. Members of the system are expected to respond to each other in a certain way according to their roles.

In the family there are boundaries that govern individual members. These boundaries help to regulate the level of interpersonal contact between family members on the one hand and between them and outsiders on the other hand. They also serve to protect the system and they must be clear and sufficiently well-defined to allow the system to provide its protective functions (Lesser & Pope, 2007). Within the boundaries of the system, patterns develop as certain family member's behaviour is caused by or causes other family members' behaviours one way or the other. Retaining the same pattern of behaviours within a system may lead to balance in the family system, but also to dysfunction. For example, if parents are not good role models and/or lack parental control over their adolescents, the adolescents are more likely to be involved in health compromising behaviours.

The family as a system plays both instrumental and expressive roles. The instrumental roles include socio-economic tasks such as caretaking, wage earning and household management. The family's expressive roles deal with the emotional needs of the individuals in order to protect them from harm. In order to be able to deal with the emotional roles, the role structure must be flexible enough to accommodate the needs of the individual family members. If the role structure is rigid and inflexible, problems may arise. Rigid expressive roles prevent individuals from experiencing the full range of human emotions and result in loss of sense of competence and self-esteem (Lesser & Pope, 2007).

There are also subsystems that are discrete units (such as mother-father, sister-brother, and mother-child) and supra-systems (such as the community and the State). The chief functions of the family are support, regulation, nurturance, and socialization. Specific aspects of these functions change as the subsystems interact with the supra-system. In relation to the family system theory, the substantive theory of this study appears to have more appeal with regard to adolescents' unhealthy behaviours because it went deeper beyond relationships and boundaries within the family system to be more specific on how to mitigate the serious problems of adolescent unhealthy behaviours viz: alcohol consumption, smoking, inadequate consumption of fruit and vegetables, inadequate oral care and inappropriate consumption of sugars, with the novel idea of taming and training the taste buds of the child as well as training the child positively from infancy through preadolescence to acquire and retain health enhancing behaviours by way of providing the enabling environment.

The substantive theory highlights key parental variables such as parental knowledge and role modelling, parent-child relationship/communication and parental support, parental control/permissiveness that are pivotal to the mitigation of health compromising behaviours among adolescents.

#### ***Adolescent developmental theory- Lewin's field theory***

Among the theories on adolescent development, the nearest to the present study of research is Lewin's field theory which is conceptually different from the others. His theory on adolescent development is explicitly stated in the "Field Theory and Experiment in Social Psychology" (Lewin, 1939) and explains and describes the dynamics of behaviour of the individual adolescent without generalizing about adolescents as a group. His constructs help to describe and explain, and predict the behaviour of a given individual in a specific situation. In a sense, the field theory of adolescence is expressed explicitly and stated more formally than other theories of adolescent development.

The field theory has successfully integrated the biological and sociological factors, which are frequently considered contradictory (for example, the nature vs. nurture issue). Lewin makes explicit his position: "the psychological influence of environment on the behaviour and development of the child is extremely important" (Lewin, 1935).

Fundamental to Lewin's theory of development is the view that adolescence is a period of transition in which the adolescent must change his group membership. While both the child and the adult have a fairly clear concept of how they fit into the group, the adolescent belongs partly to the child group, partly to the adult group, without belonging completely to one group. Parents, teachers, and society reflect this lack of clearly defined group status; and their ambiguous feelings toward the adolescent become obvious when they treat him at one time like a child and at another time like an adult. Difficulties arise because certain childish forms of behaviour are no longer acceptable. At the same time some of the adult forms of behaviour are not yet permitted. If they are permitted, they are new and strange to the adolescent (Muuss, 1975).

The adolescent is in a state of "social locomotion," since he is moving into an unstructured social and psychological field. Goals are no longer clear, and the paths to them are ambiguous and full of uncertainties that the adolescent may no longer be certain that they even lead to his/her goals. Since the adolescent does not yet have a clear understanding of his social status, expectations, and obligations, his behaviour reflects this uncertainty (Muuss, 1975). For example, the adolescent is confronted with several attractive choices that at the same time have relatively impervious boundaries. Driving a car, smoking, drinking, consuming excessive sugars and having sexual relations are all possible goals and thus they become a part of the adolescent's life space. However, they may also be inaccessible because of parental restrictions, societal norms and legal limitations, or the individual's own internalized moral code. Since the adolescent is moving through a rapidly changing field, he does not know the directions to specific goals and is open to constructive guidance, but he is also vulnerable to persuasion and pressure (Muuss, 1975).

Field theory defines adolescence as a period of transition from childhood to adulthood. This transition is characterized by deeper and far-reaching changes, a faster rate of growth, and differentiation of the life space as compared with the preceding stage of late childhood. The transition is also characterized by the fact that the individual enters a cognitively unstructured region that results in uncertainty of behaviour. Transition from childhood to adulthood is obviously a universal phenomenon, since children become mature adults in all societies.



However, the shift from childhood to adulthood can occur in different patterns. It can take the form of a sudden shift, such as has been observed in primitive societies in which the puberty rites end childhood and signify the beginning of adulthood (Muuss, 1975).

According to Lewin, there are also cultural differences in adolescent behaviours. Moreover, the degree to which the child group and the adult group are differentiated in a given culture has far-reaching consequences for adolescent behaviours. The more clearly they are separated, the more difficult the transition (Lewin, 1942, as cited in Muuss, 1975). As close as the content of Lewin's field theory is to the substantive theory of the present study it did not delve deep enough in the sense that it did not proffer specific models for mitigating adolescent unhealthy behaviours to the extent the substantive theory has effectively done.

### ***Fit, workability, relevance and modifiability of theory***

Glaser (1978) states that if a theory is well-constructed it should fit the data (i.e. well-grounded in the data). When it fits the data it will work and be relevant within the research situation and be modifiable as well.

***Fit*** Has to do with how closely the concepts fit with the incidents they are representing, and this is related to how thorough the constant comparison of incidents to concepts was done. The theory is grounded in the data of the present study as illustrated in the excerpts in sections 6.3 and 6.4 and was derived through a thorough constant comparison of incidents to emerging concepts.

***Workability*** The theory works when it explains how the problem is being solved with much variation. The workability of the theory is shown by details of the core category as illustrated in the excerpts in section 6.3 - the taming and training of the taste buds of their growing infants; the training and nurturing of their mindsets (indoctrination) through early childhood and preadolescence. In the present study, parents expressed their perceptions of what should be done to mitigate adolescents' unhealthy behaviours through engendering the development of health enhancing behaviours from infancy and the provision of the enabling environment for their retention through early childhood and preadolescence.

**Relevance** A relevant study deals with the real concerns of participants. This is illustrated in the excerpts in section 6.4 which detailed the core concerns and burden of the parents regarding the mitigation of adolescent unhealthy behaviours of alcohol consumption of smoking, inadequate consumption of fruit and vegetables, inadequate oral care and inappropriate consumption of refined sugars.

These unhealthy behaviours have strong implications for the individual adolescents, their parents and government in terms of cost and compromised oral and general health-related quality of life even when adolescents become adults. The parents were especially, concerned and unhappy that adolescents wasted money on alcohol and smoking instead of buying healthy foods. All these concerns among others are clearly illustrated by the excerpts in sections 6.2.

## **LIMITATIONS OF THE PRESENT STUDY**

Limitations are those variables or factors outside the researcher's control. The limitations of this study include the use of semi-structured interviews, where subject bias may be a threat to the rigour of the findings. There may be inconsistency in data gathering from one participant or group of participants to another (Burns & Grove, 2005). Other possible bias are:

Potential selection bias: non-response or purposive selection may have excluded parents who hold views that were not represented in the focus groups.

Reporting bias: with focus groups interviews there is always a risk of socially desirable answers or parental responses may have been influenced by the opinions and perceptions of more vocal parents.

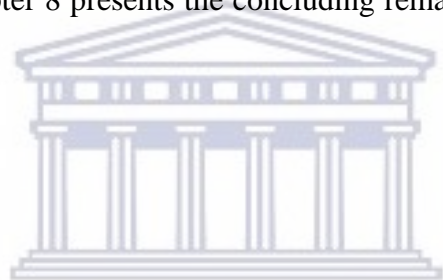
Bias from the researcher: the researcher (and the independent coder) who conducted the interviews and analyzed the data may have unintentionally biased the results, because of their knowledge of the topic and the literature and their personal and professional experiences.

A limitation of qualitative research is that the results are not generalisable to the larger population because of the use of non-probability, purposive sampling strategy. Generalisability is also compromised by the small number of research participants.

The guiding questions did not include the ages of the participants adolescent children whether were early, mid or late adolescents.

In order to minimize these limitations and enhance the quality of this study, the researcher endeavoured to gather rich data through purposive selection of information rich participants and theoretical saturation of data. These limitations notwithstanding, the present study provides useful information on parents' perception of the psychosocial factors associated with health compromising behaviours related to oral health among adolescents in South African. The findings could inform policy making and effective interventions to strengthen public health efforts to improve oral and general health of South Africans.

The detailed discussion of the emergent substantive theory as well as the theoretical propositions were incorporated in chapter 7 including the evaluation of the proposed theory and the limitations of the study. Chapter 8 presents the concluding remarks and the recommendations of the study.



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## CHAPTER 8

### CONCLUDING REMARKS AND RECOMMENDATIONS

#### 8.0 Introduction

This chapter presents the concluding remarks and the recommendations proffered, based on the research findings.

#### 8.1 Contribution to knowledge

To the best of the researcher's knowledge, not much research has been conducted to investigate parents' perception of the psychosocial factors associated with health compromising behaviours related to oral health in South Africa. This is first study that combined focus group interviews and grounded theory methodology to investigate parents' perception of the psychosocial factors associated with health compromising behaviours related to oral health among adolescents in South Africa.

The few available studies focused on a single behaviour (Resnick *et al.*, 1997) or on multiple health-related behaviours, but none addressed the perceptions of parents regarding specifically five adolescent unhealthy behaviours of alcohol consumption, smoking, inadequate consumption of fruit and vegetables, inadequate oral care and inappropriate sugar consumption.

The study generated a substantive theory that provides with its novel contents, a more effective and holistic approach to the problem of adolescent unhealthy behaviours than previous theories. It went beyond the risk factors approach to comprehensively address the root causes of adolescent unhealthy behaviours. It identified new concepts related to adolescents' health compromising behaviours and connected these new concepts in a unified manner from the interview data. The new theory produced a new perspective on parental participation on the mitigation of adolescent unhealthy behaviours through the investigation of parents' perceptions of the psychosocial factors associated with the aforementioned behaviours. It brought afore the need for parents to make conscious efforts to properly train their children from infancy through preadolescence with positive adolescent health outcome expectancy.

As expected from a grounded theory the proposed theory has put forward unconventional, novel ideas and unique perspectives that clarify the important and central role parents are expected to play with regard to adolescents' unhealthy behaviours. It radically emphasized the need for parents to start this role in earnest with their infants. The new theory, the propositions and recommendations especially the two concepts: (i) Wean babies with meals not sweeter than the maternal breast milk, preferably below the sweetness of maternal breast milk because NMES are not as healthy as the natural breast milk sugar and (ii) Introduce infants very early to the taste of locally available fruit and vegetables as well as gradually introduce these fruits and vegetables and a variety of other nutrient-dense foods starting when solid foods are being introduced, thereby promoting liking through increased taste exposure. This practice has the potential to facilitate the mitigation of the adolescent unhealthy behaviours of excessive sugar and inadequate fruit and vegetables consumption.

## **8.2 Recommendations**

### ***Dental training/practice***

- Dental curricula should include more content of community/dental public health education.
- Seminars and workshop on oral health education should be organized regularly for parents.
- The dental profession should advocate for universal primary dental services for all.

### ***Parental participation***

- Exclusive breast feeding for the first six months of life.
- Wean babies with meals not sweeter than maternal breast milk, preferably below the sweetness of maternal breast milk because NMES are not as healthy as the natural breast milk sugar.
- Introduce infants very early to the taste of locally available fruits and vegetables and other nutrient-dense foods starting when solid foods are being introduced.
- Parents should be good role models including their dietary habits, by increasing their consumption of fruit and vegetables, making meals more palatable and visually appealing.
- Praise children and/or offer a non-food reward when they eat fruits and vegetables or when they try a new food.
- Encourage adolescents to eat fruits and vegetables.

- Make homes alcohol and smoking-free zones.
- Parents who smoke should quit by undertaking tobacco cessation programmes and those who drink excessively should also seek professional help before they negatively impact their adolescents.
- Supervision of oral health care activities in early childhood by parents.
- Provide safety awareness education and instructions from early childhood through adolescence.
- Parents should endeavour to attend seminars and programmes on parenting, early childhood education, the adolescence period and the management of adolescents.
- Parents should show love and cherish their children, spend quality time with them and endeavour to create a comfortable and fun family (enabling) environment in order to encourage adolescent disclosure and the development of directed academic ambition, religiosity, self-esteem and SOC.

#### ***Government and nongovernmental organisations' participation***

- Provision of social workers and counselors who are knowledgeable in nutrition and trained in antisocial behaviours in preschools up to the secondary school level.
- Instructions in safety awareness education from early childhood through adolescence in school curriculum.
- Pre-marital counseling organised by government and nongovernmental organisations should include information on parenting, early childhood education and the adolescence period to equip participants before they start having children.
- Offer regular seminars and programmes on parenting especially in the area of the provision of enabling environment.
- Dieticians and nutritionist should give talks and demonstrations in schools, ante-natal and post-natal clinics how to prepare naturally tasty fruit and vegetable meals.
- Provision of delicious vegetable and fruits salads made fresh from school gardens in midday meals in preschool, primary and secondary schools nationally.
- Regulate alcohol availability.
- Enforcement of laws governing underage alcohol consumption/increasing age restriction.
- Government should escalate taxes on alcoholic drinks and cigarettes.
- Establishment of universal primary dental clinics.
- Establishment of mobile primary dental units for inaccessible rural areas.

- Government should ban advertisements of alcohol, smoking, sugars and sugar-sweetened beverages and control their marketing.
- Government should enact and enforce law against adolescent smoking as well as ban in general smoking in all public spaces including walkways.

### ***Future research***

- Investigation of the effects of weaning babies off exclusive breast feeding with meals not sweeter than maternal breast milk on adolescent health behaviour of refined sugar consumption.
- Investigation of the effects of introducing infants to the taste of locally available fruits and vegetables as well as gradual introduction of these fruits and vegetables in their meals on adolescent health behaviour of fruits and vegetables consumption.
- Investigation of the effects of pregnant mothers smoking and/or using alcohol as well as the effects of the introduction of babies to the taste of alcohol and/or the effects of excessive second-hand smoking during early childhood on the propensity of adolescents to engage in smoking and alcohol use.

If the above recommendations are incorporated or included in efforts by clinicians and policy makers to develop appropriate and effective community-based and population-based intervention programmes and strategies, immense public health benefits will be derived from the resultant mitigation of adolescents' unhealthy behaviours.

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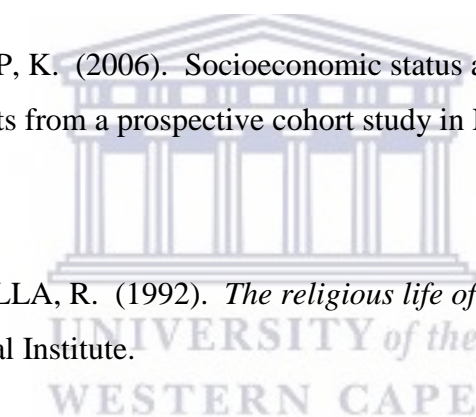
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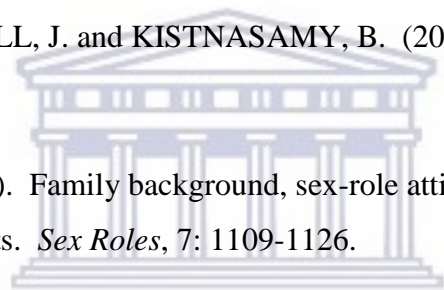
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## Appendix A

### GUIDING QUESTIONS SCHEDULE

**Has any adolescents between the ages of 10 to 19 years lived with you or living with you at the moment?**

#### **Themes to be explored:**

1. *Participants' perception of psychosocial factors associated with health compromising behaviours related to oral health among adolescents*
  - Please what do you understand by the term unhealthy behaviour.
  - Are you aware of any unhealthy behaviours among adolescents that may affect their health including their oral health i.e. their mouth with the teeth and gums?
  - Please do you know any personal traits/individual nature or social factors that can make an adolescent engage in unhealthy behaviours?
  - How do these factors/traits or individual nature as well as educational or academic ambition, religion, self-esteem, ability to cope with stress or survive in a stressful condition or environment affect the following five unhealthy behaviours:
    - (i) excessive alcohol consumption and smoking,
    - (ii) inadequate consumption of fruit and non-starchy vegetables and inappropriate consumption of refined sugars and
    - (iii) inadequate toothbrushing
  - Please tell me your role as a parent in the prevention of these unhealthy behaviours through for example, the provision of enabling environment for the development the right educational ambition, religious belief, self-esteem and ability to cope with stress.
2. *Relationships*
  - Please tell me about your adolescents. How many are they, your relationship with them (biological or social), their ages, which of these five behaviours are they or any of their peers that you know are involved in, and how easy you communicate with them?
  - Please tell me what support you give to them to control or stop these unhealthy behaviours.
3. *Participants' profile*
  - Please tell me your occupation, education, marital status (married, single, cohabiting), religion, race, residence, age, income, which of these five behaviours you or the father/mother or a relation are engaged in.
4. *Challenges faced by parents of adolescents*
  - Please tell me all the challenges you face as a parent of adolescent(s) in respect of these behaviours.
  - Please tell me what help you think you need to tackle these challenges.
  - Please tell me who you think should assist you.
5. *Parents' vision, for the future*
  - Please tell me your vision about the future of your adolescent(s).

*Appendix B*

**ETHICAL APPROVAL**



**Office of the Deputy Dean  
Postgraduate Studies and Research**  
Faculty of Dentistry & WHO Collaborating Centre for Oral  
Health



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UNIVERSITY OF THE WESTERN CAPE  
Private Bag X1, Tygerberg 7505  
Cape Town  
SOUTH AFRICA

Date: 04<sup>th</sup> March 2011

**For Attention: Dr T Okagbare**

558 Adcock Street  
Gezina  
0084

Dear Dr Okagbare

**STUDY PROJECT:** Parent's perceptions of psychosocial factors associated with health comprising behaviours related to oral health among adolescents in South Africa

**PROJECT REGISTRATION NUMBER: 11/1/55**

**ETHICS:      Approved**

At a meeting of the Senate Research Committee held on Friday 4<sup>th</sup> February 2011 the above project was approved. This project is therefore now registered and you can proceed with the work. Please quote the above-mentioned project title and registration number in all further correspondence. Please carefully read the Standards and Guidance for Researchers below before carrying out your study.

Patients participating in a research project at the Tygerberg and Mitchells Plain Oral Health Centres will not be treated free of charge as the Provincial Administration of the Western Cape does not support research financially.

Due to the heavy workload auxiliary staff of the Oral Health Centres cannot offer assistance with research projects.

Yours sincerely

Professor Sudeshni Naidoo



## *Appendix C*

### **FACULTY OF DENTISTRY**

### **UNIVERSITY OF THE WESTERN CAPE**

### **PARTICIPANT INFORMATION LEAFLET AND INFORMED CONSENT**

**Title of study: Parents' perception of psychosocial factors associated with health compromising behaviours related to oral health among adolescents in South Africa**

Primary investigator: Dr TE Okagbare

Supervisor: Prof Sudeshni Naidoo, University of the Western Cape, Cape Town.

#### **INTRODUCTION**

You are invited to volunteer for a research study. This information leaflet is to help you to decide if you would like to participate. Before you agree to take part in the study, you should fully understand what is involved. If you have any questions, which are not fully explained in this leaflet, do not hesitate to ask the investigator. You may call me, Tuweyire Okagbare at cell phone 073 136 7639 if you have further questions. You should not agree to take part unless you are completely happy about all the procedures involved.

#### **WHAT IS THE PURPOSE OF THE STUDY?**

The purpose of the study is to help us understand your view among other parents/caregivers regarding the psychosocial factors associated with health compromising behaviours related to oral health among adolescents in South Africa.

#### **WHAT WILL I BE EXPECTED TO DO IN THE STUDY?**

If you agree, your participation will entail the following:

- Sign the informed consent form or give oral consent.
- Participate in an interview at a venue and time convenient for you. The interview will focus on your perception as a parent of the psychosocial factors associated with health compromising behaviours related to oral health among adolescents in South Africa. The interview will be recorded and will take about one hour. You will have to provide some demographic data in terms of your age, educational level, ethnic group and socio-economic status.

#### **HAS THE STUDY RECEIVED ETHICAL APPROVAL?**

The protocol of the study was approved by the Senate Research Ethics Committee of University of Western Cape.

## **WHAT ARE MY RIGHTS AS A PARTICIPANT IN THIS STUDY?**

Your participation in this study is entirely voluntary – you are under no obligation to participate. You have the right to withdraw anytime and there will be no repercussion.

## **MAY ANY OF THESE STUDY PROCEDURES RESULT IN DISCOMFORT OR INCONVENIENCE?**

The study and procedures involve no foreseeable physical discomfort or inconvenience to you or your family.

## **WHAT ARE THE RISKS INVOLVED IN THIS STUDY?**

The study procedures involve no foreseeable risks to you or your family.

## **WHAT ARE THE POTENTIAL BENEFITS THAT MAY COME FROM THE STUDY?**

The interview will expose you to a better understanding of your role as a parent/caregiver in the prevention of health compromising behaviours among your children and your whole household. Furthermore, the findings of this study will contribute knowledge about the perception of parents/caregivers, linked to health compromising behaviours among adolescents. Knowledge of this will help to provide a direction for the development of community-based strategies that enhance the roles of parents/caregivers in prevention of health compromising behaviours among adolescents.

## **WILL YOU RECEIVE ANY FINANCIAL COMPENSATION OR INCENTIVE FOR PARTICIPATING IN THE STUDY?**

Please note that you **will not** be paid to participate in the study. However, you will receive refreshments after completion of the interview.

## **CONFIDENTIALITY**

All information obtained during the course of this study is strictly confidential. The study data will be coded so that it will not be linked to your name. Your identity will not be revealed while the study is being conducted or when the study is reported in scientific journals. All the data that has been collected will be stored in a secure place and not shared with any other person without your permission.

## **WHO CAN YOU CONTACT FOR ADDITIONAL INFORMATION REGARDING THE STUDY?**

The primary investigator, Dr Okagbare, can be contacted during office hours at Tel (021) 937-3003, or on his cellular phone at 073-136-7639. The study leader, Prof Sudeshni Naidoo, can be contacted during office hours at Tel (021) 937-3003.

## **DECLARATION: CONFLICT OF INTEREST**

None

## INFORMED CONSENT

I hereby confirm that I have been informed by the investigator about the nature, conduct, benefits and risks of the study. I have also received, read and understood the above written information (Participant Information Leaflet and Informed Consent) regarding the study and had the opportunity to ask questions regarding anything I was unsure about.

I am aware that the results of the study, including personal details regarding my age, ethnic group and educational level will be anonymously processed into a research report.

I may, at any stage, without prejudice, withdraw my consent and participation in the study. I had sufficient opportunity to ask questions and (of my own free will) declare myself prepared to participate in the study.

Participant's name \_\_\_\_\_ (Please print)

Participant's signature \_\_\_\_\_ Date \_\_\_\_\_

Investigator's name \_\_\_\_\_ (Please print)

Investigator's signature \_\_\_\_\_ Date \_\_\_\_\_

I, ..... (Facilitator) herewith confirm that the above participant has been informed fully about the nature, conduct and risks of the above study.

Witness's name\* \_\_\_\_\_ (Please print)  
Procedure should be witnessed whenever possible. \*consent

Witness's signature \_\_\_\_\_ Date \_\_\_\_\_

**PLEASE NOTE:** The implication of completing the interview questionnaire is that informed consent has been obtained from you. Thus any information derived from your interview (which will be totally anonymous) may be used for publication, by the investigator. As all information or data is anonymous, you must understand that you will not be able to recall your consent, as your information will not be traceable.

## *Appendix D*

### **TESCH'S DATA ANALYSIS APPROACH**

Tesch's data analysis approach provides eight steps that are to be considered when analysing qualitative data (Creswell, 2009). The eight steps are as follows:

- Given a sense of whole; all transcriptions will be carefully read and some ideas jotted down as they come to mind.
- The researcher will choose a transcription, read it carefully to make meaning out of it and write his thoughts in the margin.
- Making a list of topics and similar topics to be clustered together into columns that might be arrayed as major topics, unique topics and others.
- The list of topics will be abbreviated as codes and codes written next to the appropriate segments of the text.
- Find the most descriptive wordings, and turning them into subcategories.
- The total list of subcategories to be reduced to categories by grouping topics that relate to each other.
- Making the final decision on the abbreviation for each subcategory and category and alphabetising the codes.

Re-coding of existing data to be done if necessary

*Appendix E*

**SUMMARY OF THE MEMOS OF THE DATA ANALYSIS THAT GENERATED THE  
SUBSTANTIVE GROUNDED THEORY**

Core category/Core concern	Categories	Subcategories
Mitigating adolescents' unhealthy behaviours	Adolescent identity crisis	<ul style="list-style-type: none"> <li>- adolescent period the wild years of any human being</li> <li>- adolescents think they are sufficiently mature</li> <li>- adolescents undermine parental roles</li> <li>- adolescents see themselves as adults</li> <li>- adolescents are disrespectful and impatient</li> <li>- adolescents try to do all things adults do</li> <li>- adolescents succumb easily to peer pressure</li> <li>- adolescents prefer to be socially acceptable among friends and peers</li> <li>- adolescents like experimenting and imitating unhealthy behaviours</li> <li>- adolescents are rebellious, selfish and stubborn</li> <li>- adolescents are mischievous or naughty</li> <li>- adolescents like to one-up their parents</li> <li>- adolescents lie to get permission or approval for the bad things they do</li> </ul>
	Adolescents' unhealthy behaviours and potential modifiers	<ul style="list-style-type: none"> <li>- adolescent alcohol consumption</li> <li>- adolescent smoking</li> <li>- adolescent inappropriate sugar consumption</li> <li>- adolescent inadequate fruit and vegetables consumption</li> <li>- adolescent inadequate oral care</li> <li>- adolescents' educational aspiration</li> <li>- adolescents' religiosity</li> <li>- adolescents' self-esteem</li> <li>- adolescents' propensity to cope with stress, (SOC)</li> </ul>

Core category/Core concern	Categories	Subcategories
		<ul style="list-style-type: none"> <li>- adolescents' race/culture</li> <li>- parents as role models/ their unhealthy behaviours</li> <li>- adolescent upbringing/home environment</li> <li>- neighbourhood/society and schools</li> <li>- advertisements, marketing, negative mass and social media</li> <li>- availability, affordability of unhealthy products</li> </ul>
<p>Tame the taste buds and train the child positively from infancy through preadolescence</p>	<p>Engendering the development of health enhancing behaviours from infancy</p>	<ul style="list-style-type: none"> <li>- parents should be good role models and examples to their adolescents</li> <li>- parents should be knowledgeable with regards to unhealthy behaviours</li> <li>- parents should patiently train their adolescents from infancy in healthy enhancing behaviours</li> <li>- adolescents must consume fruit and vegetables at home</li> <li>- parents should tame the taste buds of their children</li> </ul>
	<p>Providing enabling environment and reinforcement for the retention of health enhancing behaviours</p>	<ul style="list-style-type: none"> <li>- parents should educate and guide their adolescents continually about unhealthy behaviours</li> <li>- parents should provide proper structures at home</li> <li>- parents should send their children to good schools</li> <li>- give adolescents fruits when going to school</li> <li>- proper parent-child relationship/communication and parental support is critical</li> <li>- parental control</li> <li>- challenges faced by parents of adolescents</li> <li>- who/what should assist parents (religion and religious leaders and elders, schools and teachers, family members, maids, elderly neighbours, community, government, NGOs, professional help, google etc)?</li> </ul>