

CHAPTER 5

EMPIRICAL FINDINGS FROM THE QUANTITATIVE PHASE OF THE STUDY: A PROFILE ON ALCOHOL CONSUMPTION AMONG SOUTH AFRICAN DENTISTS – A DENTIST’S PERSPECTIVE

5.1 Introduction

This study was mainly exploratory and descriptive in nature, to gain insight on alcohol consumption among South African dentists, because very little is known on alcohol consumption related to occupational stress among this group.

This chapter consists of a discussion of the research methodology and the research findings of the quantitative phase of the study. The quantitative findings are presented according to the subsections in the questionnaire used for the quantitative part of the study, in terms of biographical information, background information, stress and coping with stress, history of alcohol use or abuse and dysfunction as a result of alcohol use or abuse. A dentists’ perspective of alcohol use, as part of the quantitative approach linked to the stress and strain of the dental profession, is also discussed.

5.2 Research methodology for the quantitative approach

5.2.1 Type of research, research approach and design

In this study the researcher employed applied research to gather information to construct a profile on alcohol consumption among a selected group of South African dentists, which may be applied to construct or refine intervention models specifically for dentists that abuse alcohol. According to Bless, Higson-Smith and Kagee (2006: 44-45), the researcher’s primary motivation is sometimes to assist in solving a particular problem facing a particular community. This is referred to

as applied research and is often achieved by applying basic research findings to a particular community's challenges. In this way applied research may assist the community to overcome the problem or design interventions which will help to solve it. Grinnell (1993: 45) states that the research design is a plan or blue print of how the research is to be conducted. The researcher utilized the dominant - less dominant model of Cresswell for best results. In this model, Cresswell uses a dominant research approach, and incorporates a smaller, less dominant approach (De Vos, 2002: 365). The researcher utilized the dominant quantitative approach, of which the results are discussed in this chapter (chapter 5) with a less dominant qualitative approach of which the results are discussed in chapter 6. According to Fouché and De Vos (2002: 138) the quantitative research designs are placed in two broad categories, namely the experiments and surveys. In this study, the researcher utilized the quantitative-descriptive (survey) design by using a questionnaire to obtain data.

5.2.2 Research questions

The research questions must address what the researcher is trying to determine and for what purpose the findings will be used (Grinnell, 1993: 25, 45). After a general problem has been identified, one still has to find ways of reducing it to a specific and manageable research question (Bless, Higson-Smith and Kagee, 2006: 21). The researcher obtained answers to the following questions:

- What factors in the dental profession cause occupational stress and anxiety in South African dentists?
- What measures do South African dentists apply to cope with occupational stress and anxiety?
- To what extent do South African dentists consume alcohol to cope with occupational stress and anxiety?
- To what extent has alcohol consumption caused alcohol related problems among South African dentists?

- How can these identified occupational stress and anxiety factors present among South African dentists and the use of alcohol to cope, as well as the adverse side effects of this way to cope, be utilized to recommend intervention models for alcohol abuse and dependency specifically among dentists?

5.2.3 Objectives

The Concise Oxford Dictionary (1995: 938) defines the word *objective* as “aimed at, something sought or aimed at”. “Exploratory, descriptive and explanatory” can be regarded as objectives of professional research. Objectives are the steps taken one by one, realistically at grass-roots level, within a certain time span, in order to attain the goal, purpose or aim (Fouché, 2002: 107, 109).

The researcher identified the following objectives for this study. Each of these objectives has been investigated by means of the empirical study and reinforced by means of the literature study.

- To explore occupational stress and anxiety among South African dentists and measures they take to cope with occupational stress and anxiety.
- To explore alcohol consumption and alcohol-related problems among South African dentists.
- To explore alcohol use, abuse, and dependency related to occupational stress and anxiety among South African dentists.
- To compile a general profile on alcohol consumption among South African dentists (This thesis is seen as the profile).
- To make recommendations for dealing with alcohol dependency amongst dentists. These recommendations could be used for developing new intervention models and for refining existing intervention models for treatment and rehabilitation of dentists addicted to alcohol, or if the indications are there that a dentist is developing an alcohol-dependency problem.

5.2.4 Methods of data collection

The researcher collected data from a selected group of South African dentists (respondents or research subjects). For the quantitative method, a questionnaire was hand delivered to a sample of dentists, chosen from a sample frame of registered dentists practising in the Tshwane Metropolitan (Pretoria), Johannesburg Metropolitan, and the Krugersdorp Metropolitan areas.

5.2.4.1 Quantitative data collection

Quantitative research data can be collected by means of questionnaires, checklists, indexes, and scales (Delpont, 2002: 171). The researcher made use of questionnaires to collect the quantitative data. A survey design requires utilization of questionnaires as a data collection method, and respondents are selected by means of the random sampling method (Fouché and De Vos, 2002: 142). Questionnaires were delivered by hand to a sample of one hundred dentists (selected by means of the systematic sampling technique) from a sample frame of registered dentists practising in the Tshwane Metropolitan (Pretoria) area of the Gauteng province of South Africa. Due to an unsatisfactory response from dentists practising in the Tshwane Metropolitan area, the researcher handed another ten questionnaires, in the same way, to ten randomly selected dentists practising in the Johannesburg and Krugersdorp metropolitan areas of the Gauteng province of South Africa . The sample frame (population from which it was selected) was drawn from a list of dentists, listed in the telephone directory. The sample was checked against the list of dentists that are registered with the Health Professions Council of South Africa (HPCSA), to make sure that they are registered to practise their profession in South Africa. This list was obtained from the HPCSA. The respondents were provided with a questionnaire which they completed (Delpont 2002: 172). One hundred and ten respondents (dentists) were included, with a response rate of 70% (77 questionnaires were returned).

5.2.5 Sample (Sampling method)

The sampling procedures for the quantitative research method that was utilized in this study were carried out according to the sampling methods and procedures described by Bless, Higson-Smith and Kagee (2006: 100-110).

5.2.5.1 Quantitative sampling

One hundred and ten dentists, irrespective of type of employment, practising in the Tshwane, Johannesburg and Krugersdorp Metropolitan areas who are registered with the HPCSA, were selected. The systematic sampling method was utilized where the researcher drew a sample from a list of dentists listed in the telephone directory. These names were then verified with the list of dentists registered with the HPCSA, obtained from the HPCSA. The researcher allocated a number starting with one to each participant on the list, and then selected every second one until the desired sample size was reached (There are 283 registered dentists practising, or employed in the Tshwane Metropolitan area of which one hundred were randomly selected). However, as the result of an unsatisfactory response rate, in this area, the researcher selected another ten dentists in the same way, that practise in the Johannesburg and Krugersdorp Metropolitan areas. Thus 110 respondents were selected with a response rate of 70%.

5.2.6 Method of data analysis

5.2.6.1 Quantitative data analysis

The questionnaire was constructed in such a way that it could be processed in numerical form by means of a computer. De Vos, Fouché and Venter (2002: 223) state that data analysis in the quantitative paradigm entails that the analyst break the data down into constituent parts to obtain answers to research questions and to test research hypotheses. De Vos, Fouché and Venter (2002: 224) stipulate that data analysis involves the data collection process, which will

be complemented by the use of computer software after it has been collected and processed with a view to quantification, which is an important procedure in the data analysis. The researcher made use of consultants at the Department of Statistics at the University of Pretoria, to help with the questionnaire, data-processing and analysis. The quantitative data are presented in frequencies and percentages and by means of tables and graphs according to the various sections and sub-sections in the questionnaire. The researcher presented quantitative data in text, tabular and figure form, thus creating a visual image of the information.

5.3 Research findings of the quantitative phase

The quantitative data which were collected by means of questionnaires, are presented and interpreted by means of frequencies and percentages (descriptive statistics). The more significant data are also represented by means of tables and graphs. The questionnaire consists of questions that explore the biographical and background information of the respondents. The questionnaire also explores stress, coping with stress, history of alcohol use/abuse and dysfunction as a result of alcohol use/abuse among these respondents. Finally, there is a section that explores the general perception of dentists on alcohol use, linked to the stress and strain of the dental profession.

5.3.1 Biographical data

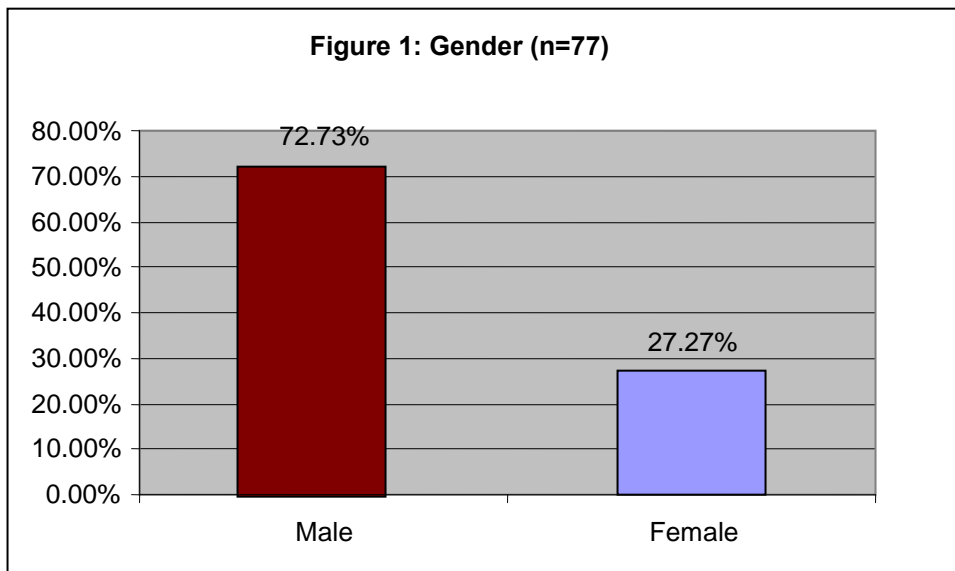
Biographical data were obtained with regard to gender, marital status, province of the RSA where the respondents grew up and attended school, South African population group, current form of full time practice, at which university the respondents received their undergraduate qualifications, at which university the respondents received their postgraduate qualifications, whether and for how long the respondents have been practising as registered dentists or dental specialists.

Subsequently, the findings of each of these biographical entities, linked to the literature, are discussed.

5.3.1.1 Gender of respondents

Research has found that most dentists use alcohol and/or drugs in moderation but that male and female dentists were more likely to use alcohol than any other drugs (Rankin and Harris, 1990: 2). For this reason, it was important to incorporate male and female dentists in the sample of South African dentists. Figure 1 indicates that 56(72.73%) of the respondents were male and 21(27.27%) were female.

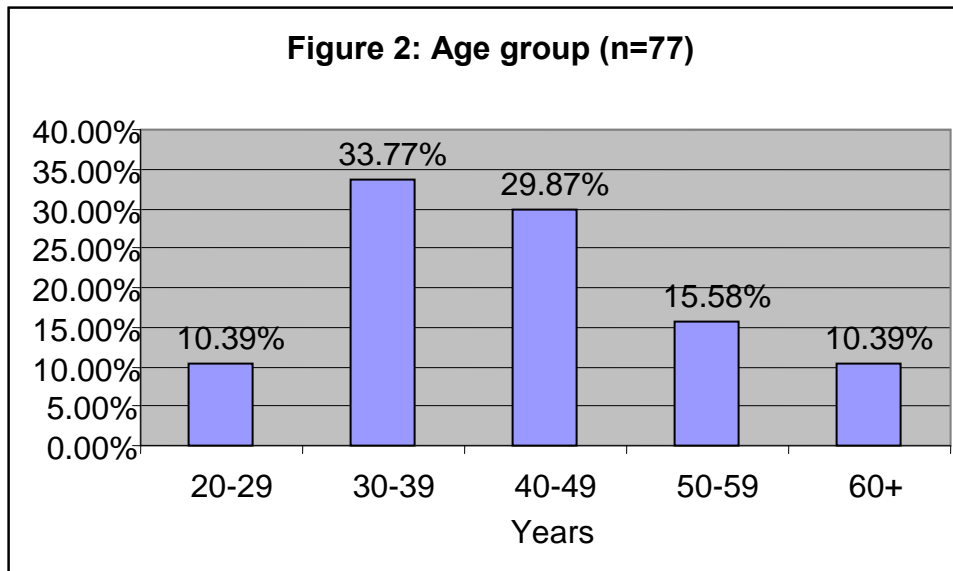
Thus, although the majority of the respondents were male dentists, this study indicated that some male and female dentists consume alcohol to a certain degree.



5.3.1.2 Age group

The purpose of this question was to determine to which age group the respondents belong. This is very important because the literature has shown that

age differences may affect the stress patterns of dentists. Brand and Chalmers conducted a study in 1990 where stress levels of dentists over the age of 54 were compared with a group of dentists below the age of 35 and found that the older dentists reported lower levels of stress. Their findings actually indicated that older dentists have favourable adaptation to life changes and lower stress levels. However, they found that certain stress factors, such as finance and patient management affected younger and older dentists more or less equally, which suggests that these issues are global rather than specific to dentistry (Brand and Chalmers, 1990: 461). Figure 2 indicates that 26(33.77%) of the respondents were 30-39 years of age, 23(29.87%) were 40-49 years of age, 12(15.58%) were 50-59 years of age, 8(10.39%) were 20-29 years of age, and 8(10.39%) were 60 years of age or above 60 years.

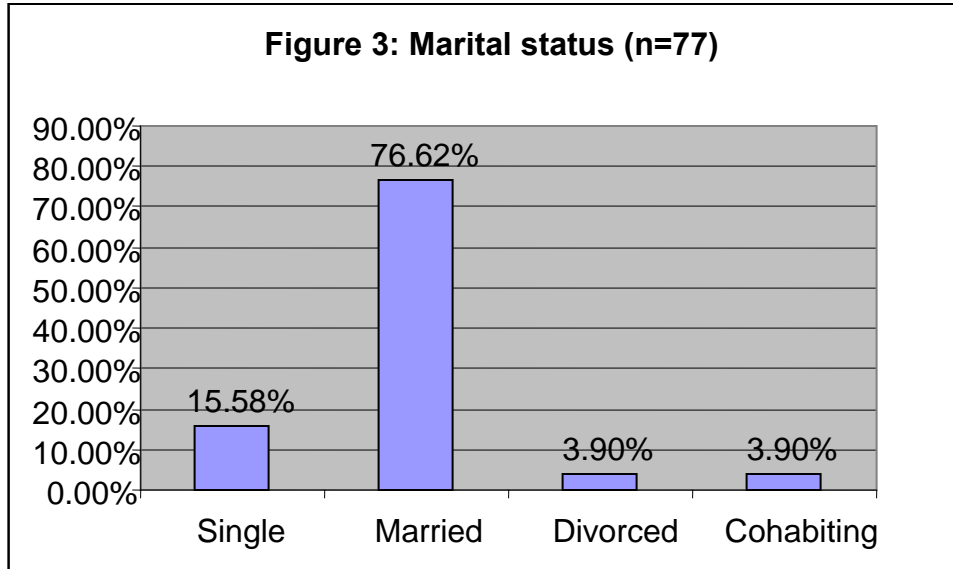


When the respondents were asked for how long they have been practising as dentists, their response correlated more or less with their age groups. Four (5.19%) respondents have been practising dentistry for less than one year, 23 (29.87%) for 1-10 years, 25 (32.47%) for 11-20 years and 25 (32.47%) for 21-30+ years. In this study the majority 26(33.77%) of the respondents were in the age group 30-39 years followed by 23(29.87%) that were in the age group 40-49

years. According to the findings of this study, the researcher agrees with the above mentioned literature that certain stress factors, such as finance and patient management affected younger and older dentists more or less equally.

5.3.1.3 Marital status

The researcher included marital status in the questionnaire because, should the prevalence of divorce rates, death of a spouse, or separation from a spouse be high among the sample of dentists, it could also have an effect on the stress levels and alcohol consumption of these dentists. A study that was conducted among South-Australian dentists revealed that existing personal vulnerability factors, other than the dental profession itself, may be much stronger predictors for hazardous alcohol consumption (Winwood, Winefield and Lushington, 2003: 102-109). Figure 3 indicates that the majority of the respondents 59(76.62%) were married, 12(15.58%) were still single, three (3.90%) were divorced, and three (3.90%) were cohabiting (living together). In this study, the majority of the respondents were married. However, the study did not determine how happily they were married. A small percentage were divorced. Thus in this study, personal vulnerability factors concerning the respondents' marriage cannot be considered as a contributing factor to the degree of alcohol consumption linked to the stress of the dental profession.



5.3.1.4 The province of the RSA where the respondents mostly grew up and attended school

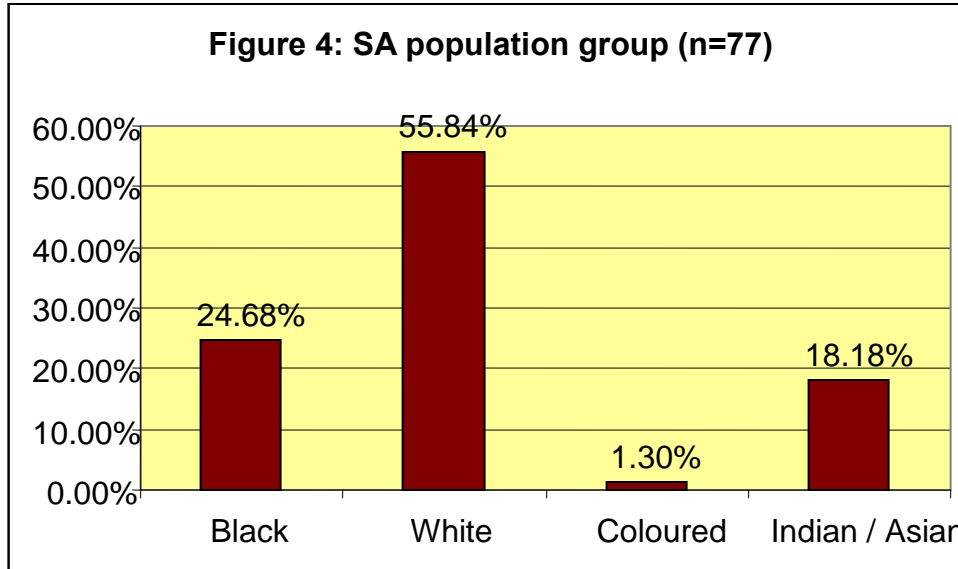
Most of the respondents grew up and attended school in the Gauteng province of SA. However, a significant number of respondents grew up and attended school in most of the other provinces. A very small percentage 2(2.60%) grew up and attended school outside the RSA. Although the sample is a sub-set of the population, the sample must have properties which make it representative of the whole. Such a group is called a representative sample (Bless, Higson-Smith and Kagee, 2006: 100). The researcher targeted dentists practising in the Tshwane Metropolitan area by drawing a sample from them. The researcher strengthened the sample by randomly selecting another ten respondents from the Johannesburg and Krugersdorp Metropolitan areas of the Gauteng province of SA. The researcher is of the opinion that dentists practising in the Tshwane, Johannesburg and Krugersdorp Metropolitan areas, are representative of all the provinces of South Africa because three of the South African dental schools are located in these areas. A distribution of the provinces of SA that were represented is indicated in Table 1. Thus the majority of the respondents were raised and are still residing in Gauteng.

Table 1: Distribution of the provinces of South Africa where the respondents mostly grew up and attended school (n =77).

Province	f (%)
Northern Cape	1 (1.30%)
Eastern Cape	1 (1.30%)
Western Cape	1 (1.30%)
Free State	2 (2.60%)
Gauteng	49 (63.64%)
North West Province	6 (7.79%)
Northern Province	6 (7.79%)
Kwa-Zulu Natal	7 (9.09%)
Mpumalanga	2 (2.60%)
Outside the RSA	2 (2.60%)
Total	77 (100%)

5.3.1.5 The South African population group to which the respondents belong

The sample must have properties which make it representative of the whole. Such a group is called a representative sample (Bless, Higson-Smith and Kagee, 2006: 100). As seen in Figure 4, the sample represented all the population groups of South Africa with the majority 43(55.84%) being white dentists, 19(24.68%) black dentists, 14(18.18%) Indian/Asian dentists and one (1.30%) coloured dentist. Before 1994, the majority of the dentists that qualified in South Africa were white. As seen from Figure 2 the majority of the respondents were older than 40 years of age and it can be assumed that they qualified before 1994.



5.3.1.6 Current form of full time practice of the respondents

Moller and Spangenberg (1996: 347-357) of the Department of Psychology at the University of Stellenbosch investigated stress and coping with stress among South African dentists. They used a randomly selected sample of 311 South African dentists, and found that 40% of the respondents reported extremely high stress levels, irrespective of the type of employment.

The current form of full time practice of the respondents in the current study is indicated in Table 2. Two (2.60%) of the respondents did not indicate their form of practice, 40(51.95%) indicated that they are currently practising as general dental practitioners in private practice, five (6.49%) indicated that they are dental specialists in private practice, 18(23.38%) indicated that they are general dental practitioners in the health services or lecturers at dental schools, 11(14.29%) indicated that they are dental specialists in the health services or lecturers at dental schools and one (1.30%) respondent is retired. However, three (3.90%) of the respondents reported that they also do additional dental work, such as locum work and session work at universities. (Therefore the cumulative % is more than 100%).

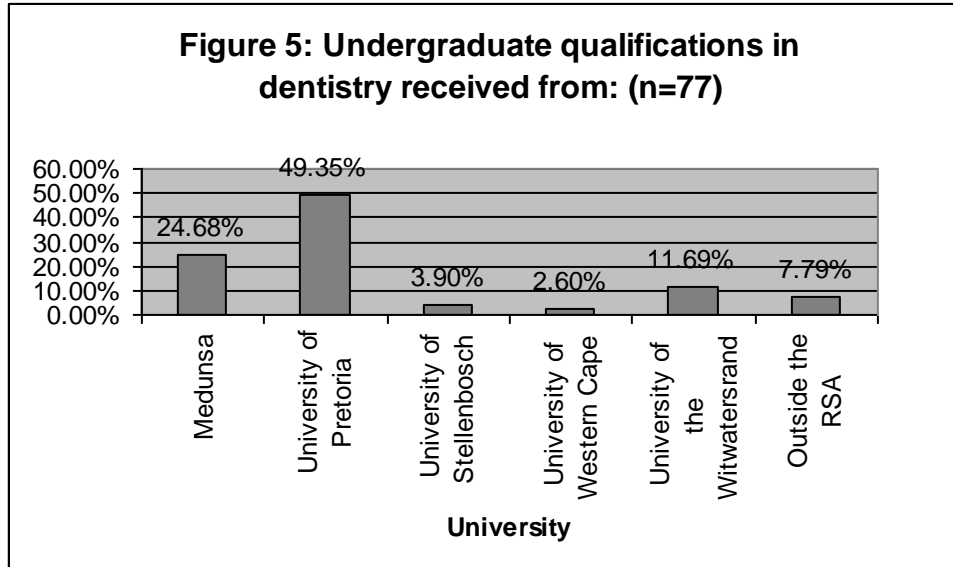
Although the majority of dentists were general dental practitioners in private practice, the sample used for this study represented all the employment possibilities for dentists.

Table 2: Current form of full time practice (n = 77).

Type of employment	f(%)
<i>No response</i>	2 (2.60%)
General dental practitioner in private practice	40 (51.95%)
General dental practitioner in the health services or lecturer at a dental school	18 (23.38%)
Dental specialist in private practice	5 (6.49%)
Dental specialist in the health services or lecturer at a dental school	11 (14.29%)
Registered as a non-practising dentist / specialist	0 (0%)
Retired	1 (1.30%)
Total	77 (100%)

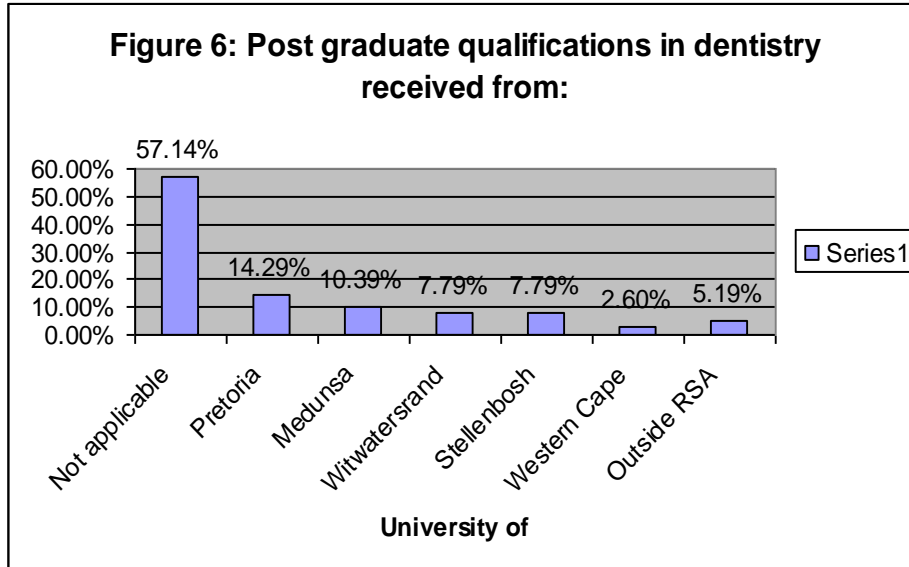
5.3.1.7 Undergraduate qualification (Bachelor degree in dentistry)

Figure 5 illustrates that the majority of the respondents 38(49.35%) received their undergraduate qualification in dentistry from the University of Pretoria, 19(24.68%) from the previously named Medical University of Southern Africa, nine (11.69%) from the University of the Witwatersrand, three (3.90%) from the University of Stellenbosch and two (2.60%) from the University of the Western Cape. However, six (7.79%) of the respondents reported that they qualified as dentists outside the RSA. Thus, all the dental schools of SA were represented in the sample. The majority qualified from the University of Pretoria followed by the Medical University of Southern Africa and the University of the Witwatersrand. This can be attributed to the fact that three of the four dental schools in South Africa are located in the Gauteng province of South Africa from where the sample was chosen.



5.3.1.8 Post graduate qualifications in dentistry

Figure 6 illustrates that the majority of the respondents 44(57.14%) either had no post graduate qualifications or did not respond to this question. Eleven (14.29%) received post graduate qualifications from the University of Pretoria, eight (10.39%) from the Medical University of Southern Africa, six (7.79%) from the University of the Witwatersrand, six (7.79%) from the University of Stellenbosch, and two (2.60%) from the University of the Western Cape. Four (5.19%) of the respondents reported that they received their post graduate qualifications outside the RSA. However, four (5.19%) of the respondents reported that they have obtained post graduate qualifications in dentistry from more than one university, thus the cumulative frequency percentage for this variable is more than a 100%. The majority of the respondents were general dental practitioners in private practice and may not see the need for further qualifications. Most of the respondents with post graduate qualifications were either employed in a dental school or as a specialist in private practice or a lecturer at a dental school.



5.4 Background information of the respondents (n = 77)

The researcher is of the opinion that the background of dentists (circumstances in which they grew up) has an influence on their ability to cope with dental stress. According to the genetic theory, substance dependency is transmissible from parents to their children by means of genes. According to this theory, alcoholism is inherited by children of alcoholic parents, rather than the environment as the primary source (Stevens-Smith and Smith, 1998:27). According to Dodgen and Shea (2000:31; cited in Erlank, 2002: 37), research has shown that:

- The sons of alcoholic biological parents have a greater chance to develop alcoholism than the sons of non-alcoholic biological parents.
- Sons of alcoholic biological parents that grew up with non-alcoholic foster parents, have the same chance to develop alcoholism, than what they would have had if they grew up with their biological parents.

The researcher believes that although alcoholism is genetically predisposed, the environment can also have a significant role to play. Next, the findings pertaining to background information of the respondents are discussed.

5.4.1 Parents/Guardians with whom the respondents grew up

Table 3 indicates that the majority 65(84.42%) of the respondents grew up with both of their biological parents and eight(10.39%) grew up with a biological mother only. Only one (1.3%) of the respondents reported that he/she grew up with a biological mother and a stepfather, two (2.6%) reported that they grew up with a biological father and a stepmother and one(1.30%) reported that he/she grew up with grandparents or family members. None of the respondents reported that they grew up with foster parents, other than family members, or in an orphanage. Thus, in this study, the prevalence of stepparents is not significant.

Six (7.79%) of the respondents reported that they did not grow up with both of their biological parents because their parents were divorced or separated, and another six (7.79%) did not grow up with both of their biological parents because their parent(s) had died. The respondents reported no other reasons for not growing up with both of their biological parents.

Table 3: Parents/guardians with whom the respondents grew up (n = 77)

Parents/guardians	f (%)
Both biological parents	65 (84.42%)
Biological mother and a stepfather	1 (1.30%)
Biological father and a stepmother	2 (2.60%)
Biological mother only	8 (10.39%)
Biological father only	0 (0%)
Family members or grandparents	1 (1.30%)
Foster parents, other than family members	0 (0%)
Orphanage	0 (0%)
Total	77 (100%)

5.4.2 Number of towns, cities and villages that the respondents lived in, and the number of primary and secondary schools they attended

The researcher agrees that addictive behaviour can be linked to biopsychosocial factors. This is a combination of biological, psychological and social factors. Murray, Hill and McGuffin (1997: 258) describe this model of addiction as follows: “This model attempts to integrate knowledge about psychological and biological vulnerabilities in a broader cultural, social and historical context. This model emphasizes the dynamic interaction of the multiple components”. The researcher is also of the opinion that environmental risk factors contribute to addictive behaviour. According to Murray, Hill and McGuffin (1997: 261), environmental risk factors that play a part in the etiology of drinking behaviour are divided into two groups:

- The factors that influence the availability of alcohol such as age, policies and the costs of alcohol.
- The factors that render the individual vulnerable to the use and abuse of alcohol, such as peer affiliation, family interaction, employment, and culture.

The researcher is of the opinion that environmental risk factors play a role in developing alcohol dependency. For this reason he wanted to know in how many towns, cities and villages the respondents lived during their scholastic years, as well as the number of primary and secondary schools the respondents attended.

Figure 7 demonstrates clearly that the majority of the respondents 42(54.55%) lived in one town, city or village during their scholastic years. However, 24(31.17%) of the respondents lived in two towns, cities or villages and ten (12.99%) lived in three towns, cities or villages during their scholastic years. One respondent (1.30%) reported that he/she lived in five or more towns, cities or villages during his/her scholastic years. Figures 8 and 9 also demonstrate that

the majority of the respondents attended only one primary school 45(58.44%) and one secondary school 55(71.43%). However, 24(31.17%) of the respondents attended two primary schools and 21(27.27%) attended two secondary schools during their scholastic years. Eight (10.39%) of the respondents reported that they attended three or more primary schools and one (1.3%) of the respondents attended three or more secondary schools during their scholastic years.

Considering, these findings the researcher is of the opinion that the number of towns, cities, or villages where the respondents lived, and the number of primary and secondary schools they attended during their scholastic years, appear to have had no significant influence on their alcohol consumption linked to the stress and strain of their profession, because the majority lived in one town, city or village only, and attended only one primary and one secondary school during their scholastic years.

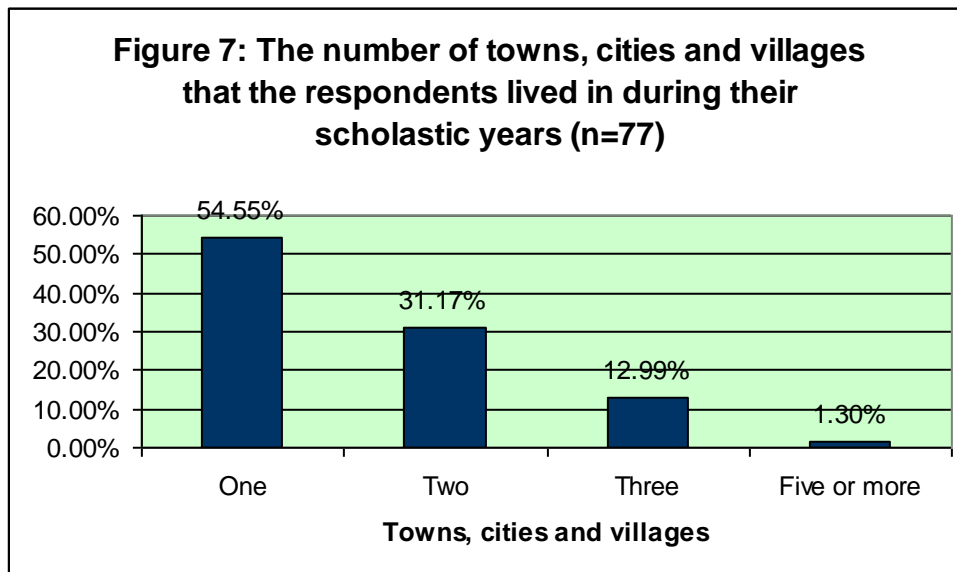


Figure 8: The number of primary schools attended (n=77)

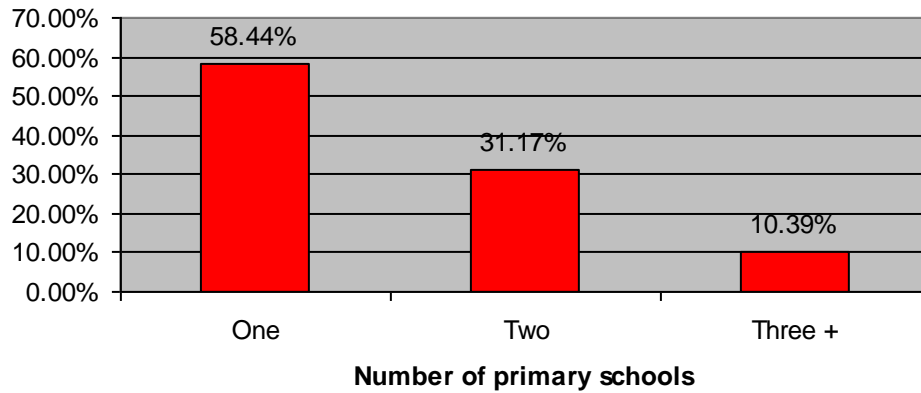
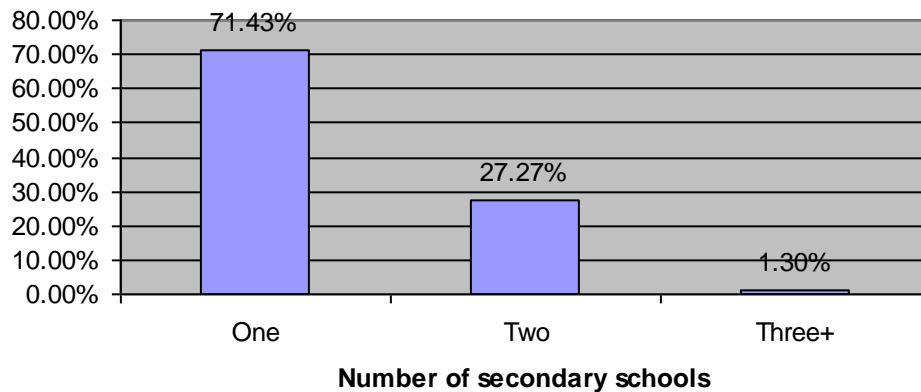


Figure 9: The number of secondary schools attended (n=77)



5.4.3 Health of the respondents during their first 18 years of life

The majority of the respondents 74(96.10%) reported that their health during the first 18 years of their lives were good and they were seldom ill. However, three (3.90%) reported that they were often ill and received treatment. The researcher is of the opinion that one's health during his childhood years has an impact on how much one will achieve as an adult. The researcher is also of the opinion that

one's health during childhood determines how much stress one can tolerate as a child and this is then carried forward into one's adult life. Rada and Johnson-Leong (2004: 788) stated in a practice management article that "How much stress a person can tolerate comfortably varies not only with the accumulative effect of the stressors, but also with such factors as personal health, amount of energy or fatigue, family situation and age. Stress tolerance usually decreases when a person is ill or has not had adequate amount of rest". They are further of the opinion that major life events, such as death and divorce reduce one's ability to tolerate stress, but past experience enhances peoples ability to manage stress and to develop coping skills. Thus, in this study, the health of the respondents during their childhood, should have no significant influence on their ability to cope with occupational stress and ways that they utilize to cope with such stress.

5.4.4 The financial positions of the families who raised the respondents

Table 4 indicates the financial positions of the families who raised the respondents.

The majority 56(72.73%) of the respondents come from middle class (average income) families. Ten (12.99%) were wealthy, and 11 (14.29%) were poor or even poverty stricken. The researcher is of the opinion that being poor, as a child, can motivate one to become a dentist because of the general belief that dentists earn enough money to make a good living. However, such people do not always bear in mind what the occupation would demand of them.

Table 4 : The financial positions of the families who raised the respondents (n = 77)

Financial status	f (%)
Wealthy	10 (12.99%)
Middle class (average)	56 (72.73%)
Poor / Poverty stricken	11 (14.29%)
Total	77 (100%)

5.4.5 Alcohol habits of the respondents' female and male guardians during their childhood

Dick and Bierut (2006: 151-7) claimed that family, twin and adoption studies have convincingly demonstrated that genes play an important role in the development of alcohol dependency, with heritability estimates in the range of 50-60% for both men and women. According to the genetic theory of substance dependency, substance dependency is transmissible from parents to their children by means of genes. According to this theory, alcoholism is inherited by children of alcoholic parents, rather than the environment as the primary source (Stevens-Smith and Smith, 1998:27).

Table 5 indicates that 45(58.44%) of the respondents' female guardians did not use alcohol at all during the respondents' childhood and 26(33.77%) reported that their female guardians who raised them were light social non-problematic drinkers. However, four (5.19%) reported that their female guardians were heavy social non-problematic drinkers and one (1.30%) reported that his/her female guardian who raised him/her was problematic drinker. One respondent (1.30%) reported that his/her female guardian was alcohol dependent.

Table 6 indicates that 19(24.68%) of the respondents' male guardians did not use alcohol at all, 41(53.25%) were light social non-problematic drinkers and nine (11.69%) were heavy social non-problematic drinkers during the respondents'

childhood years. However, five (6.49%) reported that their male guardians were problematic drinkers and two (2.60%) claimed that their male guardians who raised them were alcohol dependent.

The majority of the male or female guardians of the respondents during childhood either did not use alcohol at all or were light social non-problematic drinkers. However, a small percentage reported that their guardians (male or female) were either problematic drinkers or alcohol dependent. We should always bear in mind that alcohol induced adverse effects do not result from a genetic background alone. Gemma, Vichi and Testai (2006: 8-16) state that alcohol adverse effects result from a broad range of complex interactions between environmental, behavioural, genetic and social factors. The researcher has also observed, while having conversations with people who are alcohol dependant, that some of these people did not necessarily come from a family with a genetic alcohol problem, but that their environment, social behaviour or working conditions led to their drinking pattern.

Table 5: The alcohol habits of the female guardians of the respondents during their childhood (n = 77).

Alcohol habits of female guardians	<i>f</i> (%)
Did not use alcohol	45 (58.44%)
Light social non-problematic drinker	26 (33.77%)
Heavy social non-problematic drinker	4 (5.19%)
Problematic drinker	1 (1.30%)
Alcohol dependent	1 (1.30%)
Total	77 (100%)

Table 6: The alcohol habits of the respondents male guardian during their childhood (n = 77).

Alcohol habits of male guardians	f (%)
No response	1 (1.30%)
Did not use alcohol	19 (24.68%)
Light social non-problematic drinker	41 (53.25%)
Heavy social non-problematic drinker	9 (11.69%)
Problematic drinker	5 (6.49%)
Alcohol dependent	2 (2.60%)
Total	77 (100%)

When alcohol consumption of the respondents was compared to alcohol consumption of their parents/guardians, no significant statistical difference ($p = 0.6171$, thus $> 0,05$) was found. These statistical values were obtained by means of the Mann – Whitney non parametric test. This indicates that the alcohol consumption of the respondents, more or less, correlated with the alcohol consumption of their parents/guardians who raised them, indicating that genetics and environment have an effect on the quantity of alcohol use/abuse.

5.4.6 The use of drugs (prescription or street drugs) on a regular basis by the guardians (male or female), of the respondents who raised them.

Tables 7 and 8 indicate the use of drugs (prescription or street drugs) on a regular basis by the respondents' guardians (male or female) during the respondents childhood (n = 77).

Table 7 indicates that the majority of the respondents' parents/guardians - male, 71(92.21%) and female, 64(83.12%) did not use prescription drugs on a regular basis during the respondents' childhood. However, more female guardians 13(16.88%) used prescription drugs on a regular basis, than male guardians five (6.49%).

Table 8 indicates that the majority of the respondents' parents/guardians - male, 74(96.10%) and female 75(97.40%) did not use street drugs on a regular basis during the respondents' childhood. However, a very small percentage one (1.30%) of the respondents' male and female parents/guardians used street drugs on a regular basis. What is significant is that one respondent (1.30%) reported that he/she has had a problem with prescription or street drugs, which correlates with the finding that more or less the same percentage of the respondents' parents/guardians had problems with prescription or street drugs. Thus drug addiction, as is in the case with alcohol addiction, has a genetic background.

Table 7: Prescription drugs used on a regular basis by the respondents' parent(s)/guardian(s) (n = 77).

	Yes: f(%)	No: f(%)	No response	Total
Female	13 (16.88%)	64 (83.12%)	0 (0%)	77 (100%)
Male	5 (6.49%)	71 (92.21%)	1 (1.30%)	77 (100%)

Table 8: Street drugs from drug dealers used on a regular basis by the respondents' parent(s)/guardian(s) (n = 77)

	Yes: f(%)	No: f(%)	No response	Total
Female	1 (1.30%)	75 (97.40%)	1 (1.30%)	77 (100%)
Male	1 (1.30%)	74 (96.10%)	2 (2.60%)	77 (100%)

5.4.7 The relationship the respondents had with their parent(s) / guardian(s) during their childhood

The researcher is of the opinion that a person's relationship with his/her parents or guardians who raised him/her has an impact on his/her life as an adult. Weller (2007: 300) defines personality as: "the sum total of heredity and inborn

tendencies, which influences from environment and education, which forms the mental make-up of a person and influences attitude to life”. For this reason, the researcher believes that components of a person’s relationship with his/her parents, as a child, may influence such a person’s ability to cope with stress in his/her adult life, as well as the ways that such a person utilize to cope with stress.

Table 9 indicates that the majority of the respondents had a good relationship with their parents/guardians during their childhood. However, 11(14.29%) reported a poor relationship with their female parent/guardian, and six (7.79%) reported a poor relationship with their male parent /guardian who raised them. Eighteen (23.38%) of the respondents described their relationship with their male guardian as satisfactory.

Table 9: The relationship the respondents had with their parent(s)/guardian(s) during their childhood.

	No response <i>f</i> (%)	Poor <i>f</i> (%)	Satisfactory <i>f</i> (%)	Good <i>f</i> (%)	Total
Female	0 (0%)	11 (14.29%)	0 (0%)	66 (85.71%)	77 (100%)
Male	1 (1.30%)	6 (7.79%)	18 (23.38%)	52 (67.53%)	77 (100%)

In this study, the majority of the respondents (male and female) had a good or satisfactory relationship with their parent(s) / guardian(s) with whom they grew up. Thus, in this study, the relationship the respondents had with their parent(s) / guardian(s) during their childhood did not have a significant influence on their ability to cope with occupational stress deriving from the dental profession.

5.4.8 Components of the relationship the respondents had with their parent(s)/guardian(s) during their childhood

Psychologists view behaviour (all kinds of behaviour and not just addictions) as determined by a multitude of factors, such as culture, family, social group, lifestyle, environment, behavioural skills, thoughts, feelings and physical factors (McMurrin, 1994: 31-33). The researcher is of the opinion that the components of the relationship, such as experiencing security, experiencing acceptance, open and meaningful communication and consistent discipline, one has with his parents/guardians who raised him/her will influence his/her ability to cope with life situations that may arise.

5.4.8.1 Components of the relationship the respondents had with their female parent/guardian during their childhood

In Table 10 we see that the majority of the respondents as children, had a good relationship with their female parent/guardian in all the components listed in Table 10. However, Table 10 also indicates that there are components of the relationship, that the respondents reported as a poor relationship. Relationships that were reported as poor in this category were: experiencing security one (1.30%), experiencing acceptance two(2.60%), open and meaningful communication 10(12.99%), consistent discipline four(5.19%), support and encouragement five(6.49%), experiencing acknowledgement from their female parent/guardian three(3.90%), receive positive and constructive problem solving skills from their female parent/guardian 13(16.88%), openness to express emotions towards their female parent/guardian 15(19.48%), an atmosphere created by their female parent /guardian for them to develop a positive self-image and self-confidence seven(9.09%).

Table 10: The components of the relationship the respondents had with their female parent / guardian during their childhood (n = 77).

Components of the relationship	No response f (%)	Poor f (%)	Good f (%)	Total
Experiencing security	1 (1.30%)	1 (1.30%)	75 (97.4%)	77 (100%)
Experiencing acceptance	1 (1.30%)	2 (2.60%)	74 (96.10%)	77 (100%)
Open and meaningful communication	0 (0%)	10 (12.99%)	67 (87.01%)	77 (100%)
Consistent discipline	1 (1.30%)	4 (5.19%)	72 (93.51%)	77 (100%)
Support and encouragement	1 (1.30%)	5 (6.49%)	71 (92.21%)	77 (100%)
Experiencing acknowledgement from your female parent / guardian	1 (1.30%)	3 (3.90%)	73 (94.81%)	77 (100%)
Receive positive and constructive problem solving skills from your female parent /guardian	2 (2.60%)	13 (16.88%)	62 (80.52%)	77 (100%)
Openness to express emotions towards your female parent / guardian	1 (1.30%)	15 (19.48%)	61 (79.22%)	77 (100%)
An atmosphere created by your female parent /guardian for you to develop a positive self-image and self-confidence	1 (1.30%)	7 (9.09%)	69 (89.61%)	77 (100%)

5.4.8.2 Components of the relationship the respondents had with their male parent/guardian during their childhood

In Table 11 we see that the majority of the respondents as children, had a good relationship with their male parent/guardian (67.53% - 83.12%), in all the components listed in Table 11. However, Table 11 also indicates that there are components of the relationship, that the respondents reported as a poor relationship. Relationships that were reported as poor were: experiencing security ten(12.99%), experiencing acceptance nine(11.69%), open and meaningful communication 22(28.57%), consistent discipline seven(9.09%),

support and encouragement 11(14.29%), experiencing acknowledgement from their male parent / guardian 11(14.29%), receive positive and constructive problem solving skills from their male parent /guardian 16(20.78%), openness to express emotions towards their male parent / guardian 19(24.68%), an atmosphere created by their male parent /guardian for them to develop a positive self-image and self-confidence 12(15.58%).

Table 11: The components of the relationship the respondents had with their male parent/guardian during their childhood (n = 77).

Components of the relationship	No response f (%)	Poor: f(%)	Good: f(%)	Total
Experiencing security	4 (5.19%)	10 (12.99%)	63 (81.82%)	77 (100%)
Experiencing acceptance	4 (5.19%)	9 (11.69%)	64 (83.12%)	77 (100%)
Open and meaningful communication	3 (3.90%)	22 (28.57%)	52 (67.53%)	77 (100%)
Consistent discipline	4 (5.19%)	7 (9.09%)	66 (85.71%)	77 (100%)
Support and encouragement	4 (5.19%)	11 (14.29%)	62 (80.52%)	77 (100%)
Experiencing acknowledgement from your male parent / guardian	4 (5.19%)	11 (14.29%)	62 (80.52%)	77 (100%)
Receive positive and constructive problem solving skills from your male parent /guardian	4 (5.19%)	16 (20.78%)	57 (74.03%)	77 (100%)
Openness to express emotions towards your male parent / guardian	4 (5.19%)	19 (24.68%)	54 (70.13%)	77 (100%)
An atmosphere created by your male parent / guardian for you to develop a positive self- image and self-confidence	5 (6.49%)	12 (15.58%)	60 (77.92%)	77 (100%)

In general, as seen from Tables 10 and 11, aspects of the relationship that the respondents had with their female parent/guardian as children were better than the aspects of the relationship they had with their male guardian.

If the relationship the respondents had with their parents/guardians, as children, be a contributing factor to their drinking behaviour in order to cope with the stress and strain of the dental profession, the researcher would agree with McMurrin (1994: 34-48) that:

- There is no single explanation of addiction.
- Psychological theories are not specific to addictive behaviours because mainstream psychological theories have been used to explain drinking and drug use.

If all behaviours are explained according to the same principles, it allows for the inclusion of non-substance-based behaviours as addiction (McMurrin, 1994: 34-48).

5.4.9 Concerning the respondents childhood and school career

The researcher is of the opinion that a person's school career, and how he/she performed at school has a major impact on several aspects of such a person's life. According to Murray, Hill and McGuffin (1997: 257), the learning model of drinking behaviour supposes that normal and abnormal behaviour are subject to the same learning processes. The researcher believes that many people learn at some stage that alcohol has some benefit, such as relaxing, calming or providing coping mechanisms for them. If alcohol had been beneficial in certain unpleasant situations, they would be inclined to use alcohol every time when an unpleasant situation arises. The researcher also believes that this is not only applicable to unpleasant situations but also for pleasant situations, e.g. a person has learned at school that academic performing is rewarding. Such a person then also strives to perform well in adult life for financial, or whatever reward, it will have for him/her.

From table 12a, it is clear that the majority of the respondents were in leadership positions 49(63.64%), with outstanding school achievements 56(72.73%), had a satisfying childhood and school career 76(98.70%), and participated in sport and extra-mural activities 69(89.61%). A smaller percentage reported problematic circumstances during their childhood and school career such as emotional problems 13(16.88%), problems at school, e.g. having difficulty in socializing, learning and discipline three(3.90%), family problems 18(23.38%), easily influenced by friends - group pressure eight(10.39%) and truancy (bunking school), detention, bullying and stealing five(6.49%). What is significant is the fact that five(6.49%) of the respondents reported that they experimented with drugs at school and 14(18.18%) reported that they experimented with alcohol during their scholastic years. The researcher is of the opinion that aspects of a person's childhood and school career can be linked to the social model of addictive behaviour. This model seeks explanation in the environment of the individual, rather than internal characteristics (Murray, Hill and McGuffin, 1997: 258).

Table 12a: Aspects concerning the respondents childhood and school career.



Aspects of childhood and school career	No response f(%)	Yes: f(%)	No: f(%)	Total
In leadership positions	3 (3.90%)	49 (63.64%)	25 (32.47%)	77 (100%)
Outstanding school achievements	3 (3.90%)	56 (72.73%)	18 (23.38%)	77 (100%)
Your childhood and school career were satisfying and positive	0 (0%)	76 (98.70%)	1 (1.30%)	77 (100%)
Sport or extra-mural activities	1 (1.30%)	69 (89.61%)	7 (9.09%)	77 (100%)
Emotional problems such as depression, anxiety and a bad self-image	3 (3.90%)	13 (16.88%)	61 (79.22%)	77 (100%)
Experimenting with drugs	1 (1.30%)	5 (6.49%)	71 (92.21%)	77 (100%)
Experimenting with alcohol	1 (1.30%)	14 (18.18%)	62 (80.52%)	77 (100%)
Problems at school e.g. having difficulty in socializing, learning and discipline	1 (1.30%)	3 (3.90%)	73 (94.81%)	77 (100%)
Family problems	1 (1.30%)	18 (23.38%)	58 (75.32%)	77 (100%)
Easily influenced by friends (group pressure)	1 (1.30%)	8 (10.39%)	68 (88.31%)	77 (100%)
Truancy (bunking school), detention, bullying and stealing	1 (1.30%)	5 (6.49%)	71 (92.21%)	77 (100%)

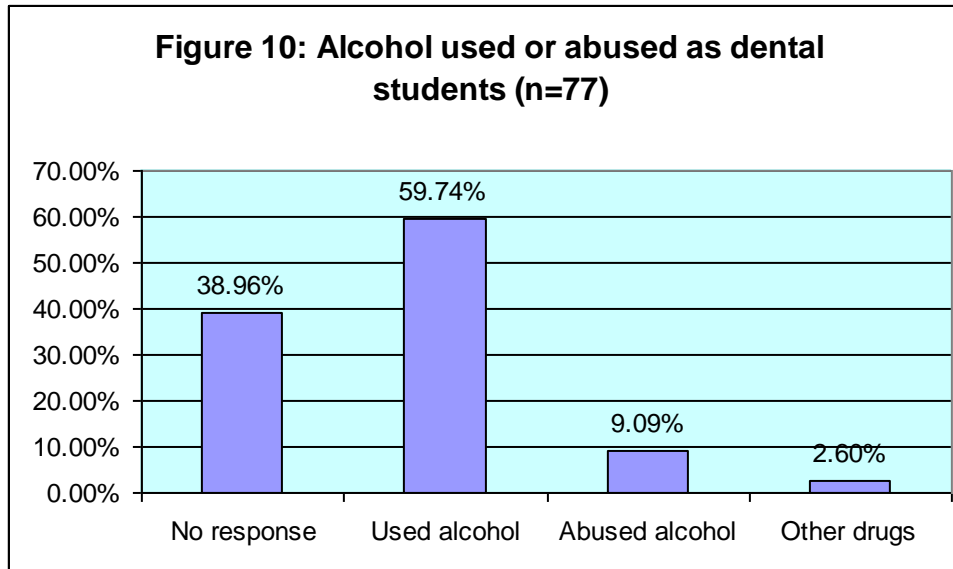
In this study, it was found that 14(18.18%) of the respondents reported that they experimented with alcohol during their scholastic years. The researcher believes that aspects of a person's childhood and school career can be linked to the social model and the learning model of addictive behaviour . A dentist that experimented with alcohol, as a child, has learned that alcohol has some beneficial effects for him (learning model of addiction) and may use alcohol to cope with stress later on in his life.

5.5 Stress and coping with stress

5.5.1 Use or over-use (abuse) of alcohol or any other substances as a dental student

The researcher is of the opinion that alcohol use/abuse among dentists starts at dental school during their study years. The researcher links this to the fact that stress levels as a result of a demanding dental curriculum are very high, and some dental students consume alcohol as a coping mechanism. Apparently, the habit of alcohol use among dentists begins early in their career. A study among dental students at the University of Newcastle found that the proportion of dental students consuming alcohol, above the recommended low risk of alcohol intake, declined from 47% in their second year of dental study to 25% in their final year, and this figure increased to 41% among qualified dentists. They also found that a greater portion of dental students use alcohol at hazardous levels when compared to medical students (Newbury-Birch, Lowry and Kamali, 2002: 646-49). Mac Donald and Mac Innis (1991: 873-76) warned that the prevention of chemical dependency, among dentists, must begin in the curricula of dental schools.

The current study among South African dentists (Figure 10), it was found that 46(59.74%) of the respondents used alcohol as a student, and seven (9.09%) used and abused alcohol as a student. A very small percentage two (2.60%) of the respondents reported that they used other mood altering substances during their university days.



Comment on Figure 10: Some of the respondents selected more than one of these options, therefore the cumulative percentage is more than a 100%.

When the respondents were asked why they used/abused alcohol as dental students (Table 12b) they reported as follows: Twelve (15.58%) reported that it was a way of relaxation as a result of demanding dental studies, one (1.30%) used alcohol to relief depression / mood disorder, seven (9.09%) used alcohol as a way of escaping from stress related to the field of study (dentistry), one(1.30%) reported that he/she used alcohol as a means to escape stress resulting from irregular and long working and study hours, three(3.90%) used alcohol as a way of getting relief from emotional experiences related to dental training, and the majority 48(62.37%) used alcohol as a way of socializing only. The researcher agrees with other researchers that the habit of alcohol use among dentists starts at dental school. Although the majority of the respondents 48(62.37%) reported that they used alcohol as a way of socializing only, this study also indicates that dental students also use alcohol as a coping mechanism.

Table 12b: The reasons why the respondents used/abused alcohol as dental students (n = 77).

Reasons why the respondents used/abused alcohol as dental students	No response: f(%)	Reported positively: f(%)	Total
Not applicable	52 (67.53%)	25 (32.47%)	77 (100%)
Way of relaxation as a result of demanding dental study	65 (84.42%)	12 (15.58%)	77 (100%)
Relief from depression / mood disorder	76 (98.70%)	1 (1.30%)	77 (100%)
Way of escaping from stress related to the field of study (dentistry)	70 (90.91%)	7 (9.09%)	77 (100%)
Relief from sleeping problems	77 (100%)	0 (0%)	77 (100%)
Irregular and long working and study hours	76 (98.70%)	1 (1.30%)	77 (100%)
Way of getting relief from emotional experiences related to dental training	74 (96.10%)	3 (3.90%)	77 (100%)
A way of socializing	29 (37.66%)	48 (62.37%)	77 (100%)

5.5.2 Positive effects of alcohol for dental students

The respondents that used or abused alcohol as dental students reported that alcohol did have some positive effects for them as dental students. They reported as follows:

Thirty-six (46.75%) reported that this question was not applicable to them, 31(40.26%) reported that it had a relaxing effect on them, 15(19.48%) reported that alcohol calmed them, two (2.60%) reported that they used alcohol to relieve their depression and mood disorder, nine (11.69%) reported that they used alcohol to relieve frustration, three(3.90%) used alcohol to relieve exhaustion, one (1.30%) used alcohol to relieve emotional pain, four (5.19%) used alcohol to relieve loneliness, six (7.79%) used alcohol to relieve anxiety, nine(11.69%) used alcohol to obtain self-confidence, ten(12.99%) used alcohol to escape daily work stress, and two(2.60%) used alcohol to relieve emotional stress. However, none

of the respondents reported that they used alcohol to relieve physical pain and sleeping problems. From these findings, it is clear that alcohol has some beneficial effects on some dentists, which starts in their student years.

5.5.3 Causes of stress in the dental profession

The researcher is of the opinion that work stress is not experienced in the same way by all dentists and supports the findings of Gorter *et al.* (1999: 144) who reported that work-stress, among dentists, is determined in terms of what is experienced as work-stress. In other words, what one dentist experiences as stress, another dentist does not experience as being stressful, or experiences the same stress in a different degree. The researcher also agrees with Mazey (1994: 13) that there are particular stressors to the individual, but there are potential stress factors in each dental office, such as economic conditions, difficult patients, inherent personality traits and physical constraints.

Table 13 illustrates the causes of stress among this sample of dentists. The respondents could choose as many causes as they wanted to.

Table 13: The respondents reported the following causes of stress in the dental profession (n = 77).

Causes of stress in the dental profession	No response f(%)	Reported Positively: f(%)	Total
Irregular long working hours	52 (67.53%)	25 (32.47%)	77 (100%)
Demands and expectations of patients	26 (33.77%)	51 (66.23%)	77 (100%)
Working in close physical range of the patient (invasion of your personal space)	64 (83.12%)	13 (16.88%)	77 (100%)
Management and business demands of a practice	42 (54.55%)	35 (45.45%)	77 (100%)
Balance between professional and family life	53 (68.83%)	24 (31.17%)	77 (100%)
Emotional and physical exhaustion	47 (61.04%)	30 (38.96%)	77 (100%)
Minimal time for personal and family recreation because of the dental profession	49 (63.64%)	28 (36.36%)	77 (100%)
Time management in terms of appointments	52 (67.53%)	25 (32.47%)	77 (100%)
No built in social psychological support system in the profession	59 (76.62%)	18 (23.38%)	77 (100%)
Fear of risk of HIV and other infections	62 (80.52%)	15 (19.48%)	77 (100%)
Safety issues e.g. physical injury	72 (93.51%)	5 (6.49%)	77 (100%)
Financial issues	30 (38.96%)	47 (61.04%)	77 (100%)
The fear of legal action against you	53 (68.83%)	24 (31.17%)	77 (100%)
Fear of loss of patients to other dentists	66 (85.71%)	11 (14.29%)	77 (100%)
Fear of dental technologists' work not being on time or up to standard	60 (77.92%)	17 (22.08%)	77 (100%)

The researcher agrees with O'Shea, Corah and Ayer (1984: 48) that a dentist's stress is derived from the following sources: Patient's compliance, pain and anxiety, interpersonal relations, the physical strain of work, economic pressures, third party constraints and the strain of seeking ideal results. From Table 13 it is clear that: Demands and expectations of patients is a major stress factor for South African dentists. Fifty-one (66.23%) of the respondents reported that

demands and expectations of patients cause them stress. Another major stress factor among South African dentists relates to financial issues. Forty-seven (61.04%) of the respondents reported that financial issues cause them stress. Management and business demands of a practice is also a stress factor, 35(45.45%) of the respondents reported this as being stressful. Emotional and physical exhaustion is also a major stress factor, among South African dentists. Thirty (38.96%) reported that emotional and physical exhaustion causes them stress. Twenty-five (32.47%) of the dentists reported that time management in terms of appointments causes them stress. Also significant was the fact that 24(31.17%) of the dentists were afraid of possible legal action against them, and 25(32.47%) reported that irregular and long working hours cause them stress.

What is very significant among this sample of South African dentists is that 28(36.36%) of the respondents reported that they have minimal time for personal and family recreation because of their profession, and 24(31.17%) reported that balancing their family life and professional life causes them stress. Other factors in the dental profession that cause South African dentists stress were reported as follows: Working in close range of the patient 13(16.88%), no built in social psychological support system in the profession 18(23.38%), fear of HIV and other infections 15(19.48%), safety issues, e.g. physical injury five(6.49%), fear of loss of patients to other dentists 11(14.29%), and the fear of the dental technologists' work not being on time or up to standard 17(22.08%).

From the above results, it is clear that there are more intense, and less intense stressors among South African dentists. The more intense stressors are: demands and expectations of patients, irregular, long working hours, management and business demands, financial issues, emotional and physical exhaustion, balance between professional and family life, minimal time for family and personal recreation because of the profession, the fear of legal action, and time management. The less intense stressors are: Working in close physical range of the patient (invasion of your personal space), no built in social

psychological support system in the profession, fear of risk of HIV and other infections, safety issues, e.g. physical injury, fear of loss of patients to other dentists, and fear of dental technologists' work not being on time or up to standard.

5.5.4 The reasons why the respondents are currently using alcohol

Through the ages, alcohol and other chemical substances have been used to relieve physical and emotional pain (Erlank, 2002: 01). The researcher is of the opinion that dentists use alcohol for a variety of reasons, which includes emotional aspects. The reasons why South African dentists are currently using alcohol are indicated in Table 14. The respondents could choose as many reasons as they wanted. The majority 34(44.16%) of the respondents indicated that this is not applicable to them, Twenty-seven (35.06%) currently uses alcohol for it's relaxing effect and ten (12.99%) for it's calming effect. However, a variety of other reasons for using alcohol, were reported in very small percentages. e.g. as a coping mechanism two(2.60%), relief of depression / mood disorder one(1.30%), relief of frustration six(7.79%), relief of total exhaustion two(2.60%), relief of grief (emotional pain) one(1.30%), relief of anxiety three(3.90%), providing self-confidence one(1.30%), escaping from daily work stress seven(9.09%), relieving emotional stress resulting from the dental profession five(6.49%), to give courage to perform a difficult dental procedure one(1.30%), to give courage to perform a dental procedure on a difficult patient one(1.30%), to perform a dental procedure on a high profile patient that is your superior one(1.30%), to get rid of a hangover before treating patients one(1.30%), in order for you to cope with the stress created by the close contact that you have with patients (invading their personal space) one(1.30%).

Table 14: The reasons why the respondents are currently using alcohol (n = 77).

The reasons why the respondents are currently using alcohol	No response: f(%)	Reported positive: f(%)	Total
Not applicable	43 (55.84%)	34 (44.16%)	77 (100%)
As a coping mechanism	75 (97.40%)	2 (2.60%)	77 (100%)
Relaxing	50 (64.94%)	27 (35.06%)	77 (100%)
Calming	67 (87.01%)	10 (12.99%)	77 (100%)
Relief of depression / mood disorder	76 (98.70%)	1 (1.30%)	77 (100%)
Relief of frustration	71 (92.21%)	6 (7.79%)	77 (100%)
Relief of total exhaustion	75 (97.40%)	2 (2.60%)	77 (100%)
Relief of grief (emotional pain)	76 (98.70%)	1 (1.30%)	77 (100%)
Relief of loneliness	77 (100%)	0 (0%)	77 (100%)
Relief of anxiety	74 (96.10%)	3 (3.90%)	77 (100%)
Providing self-confidence	76 (98.70%)	1 (1.30%)	77 (100%)
Escaping from daily work stress	70 (90.91%)	7 (9.09%)	77 (100%)
Relieving sleep problems due to work stress	77 (100%)	0 (0%)	77 (100%)
Relieving emotional stress resulting from the dental profession	72 (93.51%)	5 (6.49%)	77 (100%)
Relieving physical pain/health problems	77 (100%)	0 (0%)	77 (100%)
To give you courage to perform a difficult dental procedure	76 (98.70%)	1 (1.30%)	77 (100%)
To give you courage to perform a dental procedure on a difficult patient	76 (98.70%)	1 (1.30%)	77 (100%)
To perform a dental procedure on a high profile patient that is your superior	76 (98.70%)	1 (1.30%)	77 (100%)
To get rid of a hangover before treating patients	76 (98.70%)	1 (1.30%)	77 (100%)
In order for you to cope with the stress created by the close contact that you have with patients (invading their personal space)	76 (98.70%)	1 (1.30%)	77 (100%)

When the respondents were asked to give other reasons for using alcohol (other than those reasons listed in Table 14) they responded as follows: No response 56(72.73%), I use alcohol only to socialize 15(19.48%), I use alcohol only with

meals four(5.19%), I use alcohol only for the fun of it one(1.30%), I use alcohol because I enjoy the taste of wine one(1.30%).

In this study, it was found that the respondents used alcohol for a variety of reasons. These reasons ranged from coping with stress, resulting from their profession on the one hand to socializing with alcohol on the other hand.

5.5.5 Measures that the respondents use to relieve stress

More than two decades ago, Forrest (1978: 361-71) hypothesized that the practice of dentistry is a rewarding but demanding profession, and he claimed that the health of dentists may depend on how successful they keep the rewards and demands of their profession in proper perspective. Forrest (1978: 361-71) suggested that dentists need to identify factors that cause stress and strain, and must take measures to eliminate, or at least reduce, the harmful effects of stress and strain on their health and emotions. Linked to what Forrest said, Katz (1986: 29-36) found that the stress in the dental working environment, is a topic of great importance, and the effective reduction of stress in the dental environment has emotional and health benefits for the dentist and everyone else involved.

In this study (Table 15), it was found that the majority 54(70.13%) of the respondents do physical exercise to reduce their stress levels. A great number of dentists 41(53.25%) socialize with friends to reduce their stress levels. Taking in account that some of the respondents reported that they only use alcohol to socialize, it can be assumed that some of these dentists consume alcohol as part of socializing with friends. However, 13(16.88%) of the dentists reported that they actually use alcohol to reduce their stress levels. Table 15 indicates the measures that South African dentists take to relieve their stress levels.

Table 15: Measures that the respondents take to reduce their stress (n = 77).

Measures that the respondents take to reduce their stress	No response <i>f</i> (%)	Reported positively <i>f</i> (%)	Total
Exercise	23 (29.87%)	54 (70.13%)	77 (100%)
Eating	58 (75.32%)	19 (24.68%)	77 (100%)
Music	40 (51.95%)	37 (48.05%)	77 (100%)
Movies / Videos / DVD	52 (67.53%)	25 (32.47%)	77 (100%)
Socializing with friends	36 (46.75%)	41 (53.25%)	77 (100%)
Smoking	68 (88.31%)	9 (11.69%)	77 (100%)
Emotional outbursts	69 (89.61%)	8 (10.39%)	77 (100%)
Alcohol	64 (83.12%)	13 (16.88%)	77 (100%)
Other chemical substances	74 (96.10%)	3 (3.90%)	77 (100%)
Hobbies	42 (64.55%)	35 (45.45%)	77 (100%)
Receive counseling as a way of stress relief	74 (96.10%)	3 (3.90%)	77 (100%)

When the respondents were asked to report other ways they use for stress relief (other than listed in Table 15) they reported the following: No response 58(75.32%), talking to family and friends about stress two(2.60%), hunting, fishing and shooting competitions one(1.30%), read books / magazines four(5.19%), having sex two(2.60%), video games one(1.30%), over exercise for stress relief one(1.30%), visiting the theatre and art galleries one(1.30%), shopping two(2.60%), sleeping one(1.30%), relax with family (family outings) one(1.30%), gardening one(1.30%), regular holidays one(1.30%), and religion one(1.30%).

5.5.6 Stress levels of dentists in private practice compared to stress levels of dentists in other sectors

The researcher found that there was no statistical difference between the stress levels of dentists in private practice and stress levels of dentists in other sectors such as the health service and lecturers at dental schools.

The researcher classified low stressed dentists as those who reported 0-4 areas of stress and high stressed dentists as those who reported 5-14 areas of stress. Low and high stressed dentists in private practice were compared to low and high stressed dentists in other sectors. The Chi-Square test for association between two categorical variables was used. In this study the two categories were the stress category (low or high) and the category, are you in private practice (yes or no). No significant association was found between the two groups ($p = 0.5527$, thus > 0.05). In this study, it was found that the type of employment does not contribute to the stress levels of dentists

5.6 History of alcohol use or abuse and dysfunction

Underwood and Fox (2000: 314) claim that the sensible weekly amount of alcohol use is 14 alcoholic drinks for females and 21 for males. The National Survey on Drug Use and Health (2003) is of the opinion that heavy episodic alcohol use refers to drinking 5 or more drinks at least once during the month and heavy alcohol use refers to drinking 5 or more alcohol drinks at least at 5 occasions per month.

Moller and Spangenberg (1996: 347) investigated stress and coping with stress amongst South African dentists and found that alcohol consumption was reported as fairly high. They reported that forty-eight percent of the private dental practitioners and 41, 86% of the non-private dental practitioners took more than 2 beers, or 2 glasses of wine or 2 tots of spirits on a regular basis ranging from at

least once daily to once weekly. The South African Food Based Dietary Guidelines on sensible drinking states no more than two standard drinks per day for women and three standard drinks per day for men (Alcohol and Drug Abuse Research..., [Sa]).

5.6.1 Alcohol consumption among the sample of South African dentists used in this study

Figures 11-16 illustrate alcohol consumption among the sample of South African dentists used in this study. The criteria that were used to measure their alcohol consumption were:

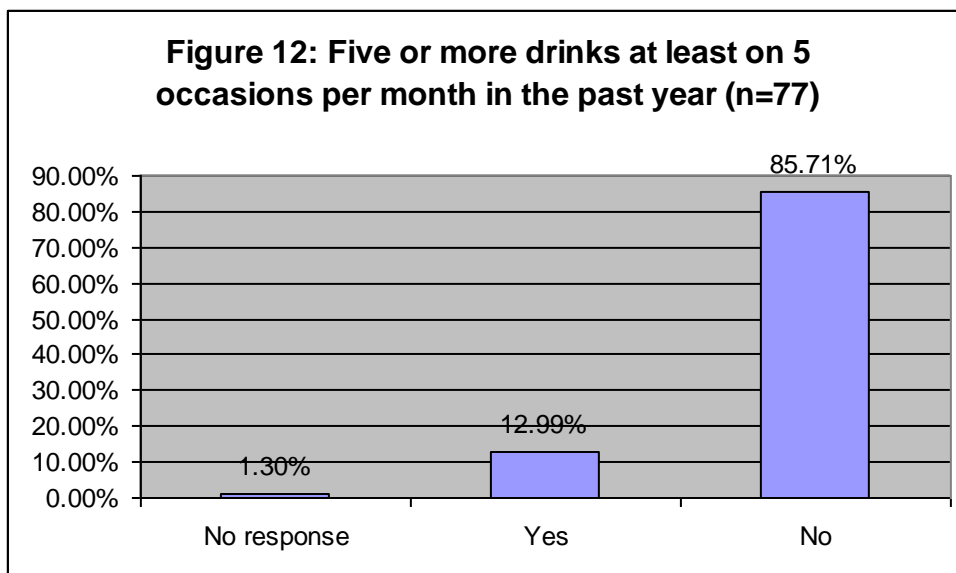
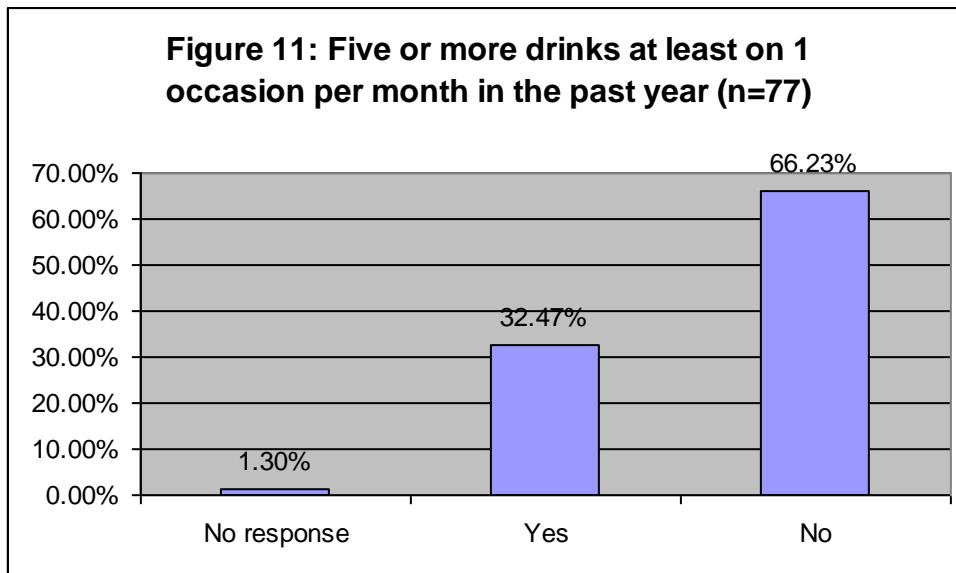
- Had 5 or more drinks at least on one occasion per month in the last year.
- Had 5 or more drinks at least on 5 occasions per month in the last year.
- The number of weekend days (Friday –Sunday) they drink alcohol on average.
- The number of alcoholic drinks (glasses of wine, beers, tots of brandy, whisky etc) they drink on average on a weekend day (Friday to Sunday).
- The number of weekdays (Monday-Thursday) they drink alcohol on average.
- The number of alcoholic drinks they drink on average on a weekday (Monday – Thursday).
- Whether they consider themselves as a non-drinker, a light-social drinker, a heavy-social drinker, a problematic drinker or an alcohol dependent.

5.6.2 The number of dentists that had 5 or more drinks at least on 1 occasion per month in the last year, and the number of dentists that had 5 or more drinks at least on 5 occasions per month in the last year.

Figure 11 illustrates the number of dentists that had 5 or more drinks at least on 1 occasion per month in the last year, and Figure 12 illustrates the number of dentists that had 5 or more drinks at least on 5 occasions per month in the last



year. Figure 11 indicates that 25(32.47%) of the respondents had 5 or more drinks at least on 1 occasion per month in the past year and Figure 12 indicates that 10(12.99%) of the respondents had 5 or more drinks at least on 5 occasions per month in the past year. According to the literature this means that 25(32.47%) of the respondents are heavy episodic alcohol users and ten (12.99%) are heavy alcohol users.



5.6.3 The respondents alcohol consumption on weekend days (Friday – Sunday) as well as the number of weekend days they drink alcohol on average, and the number of alcoholic drinks (glasses of wine, beers, tots of brandy, whisky etc) they drink on average on a weekend day.

Figures 13 and 14 indicate the respondents' alcohol consumption on weekend days (Friday – Sunday). Figure 13 the number of weekend days they drink alcohol on average, and Figure 14 the number of alcoholic drinks (glasses of wine, beers, tots of brandy, whisky, etc) they drink on average on a weekend day (Friday to Sunday).

Figure 13 illustrates that the majority of the respondents 33(42.86%) only drink occasionally on weekend days, 15(19.48%) never drink on weekends, 10(12.99%) drink on 1 of the weekend days (Friday – Sunday), 7(9.09%) drink on 2 of the weekend days, and 7(9.09%) drinks on 3 of the weekend days.

Figure 14 illustrates that those respondents who use alcohol on weekend days will drink on such a drinking day as follows: 30(38.96%) take 1-2 drinks, 16(20.78%) take 3-4 drinks, 4(5.19 %) take 5-6 drinks, and 5(6.49%) take 7-11 drinks.



Figure 13: Number of weekend days (Friday-Sunday) of alcohol consumption (n=77)

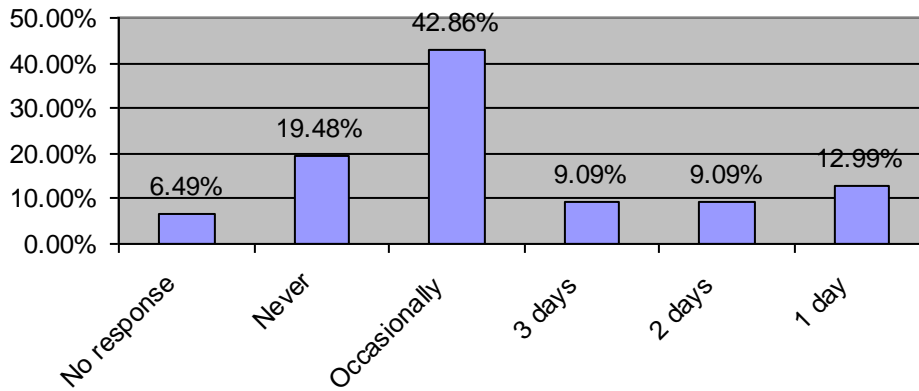
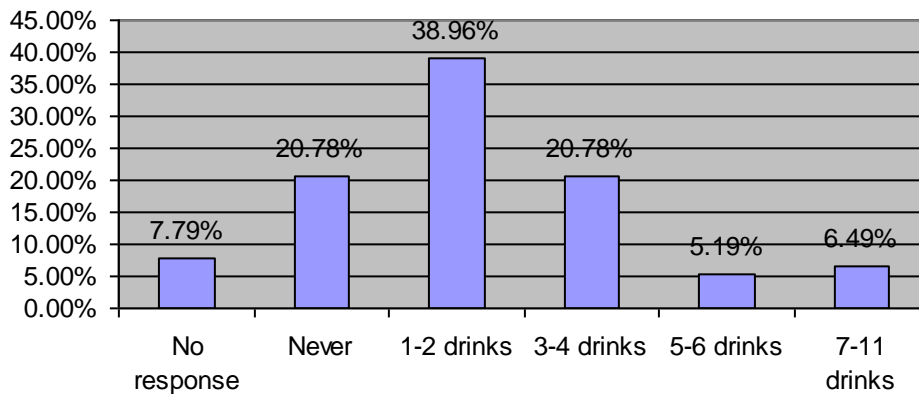


Figure 14: Number of drinks on a drinking weekend day (Friday-Sunday) (n=77)



5.6.4 The respondents alcohol consumption on weekdays (Monday – Thursday) as well as the number of weekdays they drink alcohol on average, and the number of alcoholic drinks they drink on average on a weekday.

Figures 15 and 16 indicates the respondents alcohol consumption on weekdays (Monday – Thursday). Figure 15 indicates the number of weekdays (Monday-Thursday) they drink alcohol on average, and figure 16 indicates the number of alcoholic drinks they drink on average on a weekday (Monday – Thursday).

Figure 15 illustrates clearly that the majority 41(53.25%) of the respondents never drinks on a weekday (Monday – Thursday) and 19(24.68%) only drink occasionally on weekdays. However, 6(7.79%) reported that they drink all 4 of the weekdays (Monday – Thursday), 1(1.30%) drinks 3 days, 1(1,30%) drink 2 days and 4(5.19%) drink 1 day of the weekdays (Monday – Thursday).

Figure 16 illustrates that those respondents who uses alcohol on week days (Monday – Thursday) will drink on such a drinking day as follows: 22(28.57%) take 1-2 drinks on a drinking weekday (Monday – Thursday), 5(6.49%) take 3-4 drinks, 2(2.60%) take 5-6 drinks and 2(2.60%) take 7-11 drinks on a weekday of drinking (Monday – Thursday).

Figure 15: The number of weekdays (Monday-Thursday) the respondents drink alcohol on average (n=77)

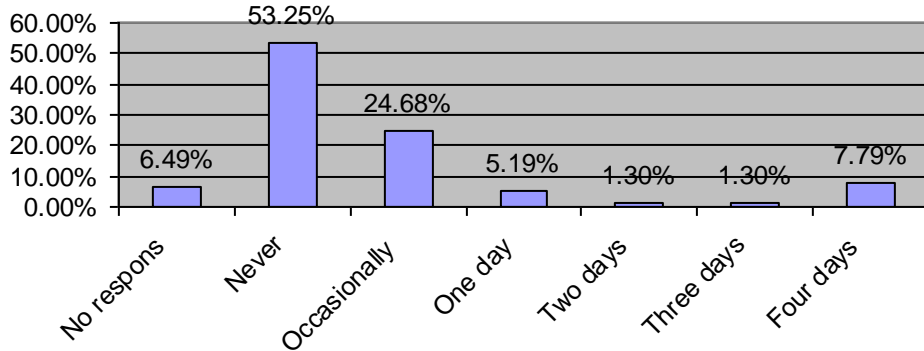
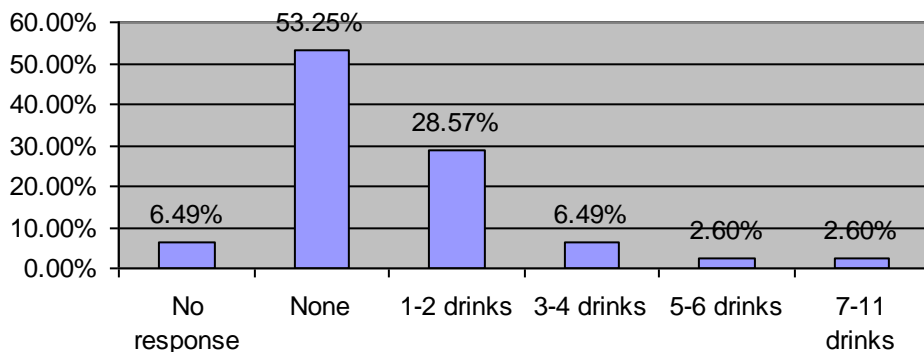


Figure 16: Number of alcoholic drinks the respondents drink on average on a drinking weekday (Monday-Thursday) (n=77)



From these results, it is clear that the majority of the respondents 41(53.25%) never drink alcohol on weekdays and 19(24.68%) only drink occasionally on weekdays. Of those who drink on a weekday, 22(28.57%) drink in the sensible alcohol limit of not more than 2 drinks for women and not more than 3 drinks for men per day. What is concerning is that six (7.79%) of the respondents reported that they drink every day of the weekdays (Monday – Thursday) and the amount they drink ranges between 3-4 and 7-11 drinks on such a drinking day.

Sixteen (20.78%) of the respondents reported that they never drink on weekend days (Friday – Sunday), and of those who use alcohol on weekend days 30(38.96%) drink in the sensible limit of 2 drinks for females and 3 drinks for males per day. However, 16(20.78%) of the respondents drink 3-4 drinks on a weekend day and nine (11.68%) drink 5-11 drinks on a weekend drinking day.

The majority of the respondents in this sample consider themselves as non-drinkers 21(27.27%) and light-social drinkers 47(61.04%). None see themselves as problematic drinkers and only one(1.3%) sees him/herself as an alcohol dependent.

When alcohol consumption of male dentists was compared with alcohol consumption of female dentists there was no significant difference ($p = 0.1632$, thus > 0.05). This p -value was determined by means of the Mann Whitney non-parametric test by the Department of Statistics, University of Pretoria.

5.6.5 Comparison of alcohol consumption by stress category

The researcher compared alcohol consumption of the respondents with their levels of stress to determine if high stress levels are accompanied by high alcohol intake. The alcohol consumption of the respondents who perceived high stress levels were compared to those who perceived low stress levels. The low stressed dentists were categorized as those who reported 0-4 areas of stress. The high stressed dentists were those who reported 5-14 areas of stress. There is a statistically significant difference between the dentists with less areas of stress (low stressed dentists) and those who reported more stress areas (high stressed dentists) with regard to their alcohol consumption ($p = 0.0026$, thus < 0.05). The p -value was determined by means of the Mann Whitney non parametric test. In this study the dentists that reported less areas of stress consumed more alcohol than the dentists who reported more areas of stress. This can be attributed to the fact that a great number of the dentists reported that

they perceive high stress levels but do not use alcohol, or they only use alcohol as a way of socializing.

5.6.6 The effect of alcohol on work as a dentist

When it comes to alcohol abuse, what is applicable to the general population is also applicable to a dentist. Lewis, Dana and Blevins (1994: 2) define substance abuse as follows: “If a client’s use of alcohol or another mood altering drug has undesired effects on his or her life or on the lives of others. The negative effects of the substance may involve impairment of physiological, psychological, social or occupational functioning”. They further claim that “Of all the substances likely to cause problems among clients, alcohol is the most common”. For the purpose In this study, “client” refers to dentist.

Tables 16-19 indicate how the use of alcohol has affected the respondents work, personal life, functioning in their personal life, and their health. The respondents could give more than one option. Table 16 indicates how alcohol has affected the respondents’ work, as a dentist. The majority of the respondents 52(67.53%) reported that the use of alcohol has not affected their work as a dentist in any way. However, small percentages of the respondents reported that alcohol use has affected their work as a dentist as follows: getting behind in work due to alcohol consumption one(1.30%), call in sick or late due to alcohol consumption two(2.60%), can’t get along with people due to alcohol consumption one(1.30%), neglect your work due to alcohol consumption two(2.60%), cancel patients due to alcohol consumption one(1.30%), provide less than your best patient care due to alcohol consumption one(1.30%). One respondent reported that alcohol use in moderation could not affect his/her work as a dentist, and one respondent reported that he/she quit alcohol use, so it could not affect his/her work as a dentist any more. The researcher assumes that alcohol use did affect these respondents’ work as a dentist somehow in the past, but it is not applicable any longer.

Table 16: How the use of alcohol has affected the respondents work as a dentist (n = 77).

How the use of alcohol has affected the respondents work as a dentist	No response f(%)	Frequency positive: f(%)	Total
Getting behind in work due to alcohol consumption	76 (98.70%)	1 (1.30%)	77 (100%)
Call in sick or late due to alcohol consumption	75 (97.40%)	2 (2.60%)	77 (100%)
Cannot get along with people due to alcohol consumption	76 (98.70%)	1 (1.30%)	77 (100%)
Neglect your work due to alcohol consumption	75 (97.40%)	2 (2.60%)	77 (100%)
Cancel patients due to alcohol consumption	76 (98.70%)	1 (1.30%)	77 (100%)
Provide less than your best patient care due to alcohol consumption	76 (98.70%)	1 (1.30%)	77 (100%)
The use of alcohol has not affected my work as a dentist in any way	25 (32.47%)	52 (67.53%)	77 (100%)

5.6.7 How alcohol has affected the personal lives of the respondents

Table 17 indicates how alcohol has affected the personal lives of the respondents. The majority of the respondents did not respond to this question. However, nine (11.69%) reported that they worry at times that they may be using too much alcohol or too often, eight (10.39%) reported that they have shown bad behavior due to alcohol use, two (2.60%) neglect to do daily routine tasks such as shopping due to alcohol use, and two (2.60%) neglect their personal appearance (e.g. clothing and shaving) due to alcohol use. What is significant is that five (6.49%) of the respondents were involved in a motor car or any other accident due to their alcohol consumption, and that two (2.60%) have been convicted in a court of law for something that they did under the influence of alcohol. In this study, none of the respondents have seriously considered suicide

because of their alcohol drinking habit. Other ways, not listed in Table 17, of how alcohol has affected the personal lives of the respondents were reported as follows: One respondent reported that alcohol use affects the relationship between couples (married or unmarried). Two of the respondents reported that alcohol has affected their personal lives but not significantly. One respondent reported that he has quit alcohol so currently alcohol does not affect his/her personal life. The researcher assumes that in the past, alcohol did affect this respondent's personal life, but that he/she is fine now.

Table 17: How the personal lives of the respondents have been influenced by alcohol (n = 77). The respondents could choose as many options as they wanted.

How the personal lives of the respondents have been influenced by alcohol	No response f(%)	Frequency positive: f(%)	Total
You worry at times that you may be using too much alcohol or too often	68 (88.31%)	9 (11.69%)	77 (100%)
Neglecting to do daily routine tasks such as shopping etc due to alcohol use	75 (97.40%)	2 (2.60%)	77 (100%)
Neglecting your personal appearance (clothing, shaving etc)	75 (97.40%)	2 (2.60%)	77 (100%)
Bad behaviour due to alcohol use	69 (89.61%)	8 (10.39%)	77 (100%)
Motor car or any other accident due to your alcohol consumption	72 (93.51%)	5 (6.49%)	77 (100%)
Convicted in a court of law for something that you did under the influence of alcohol	75 (97.40%)	2 (2.60%)	77 (100%)
Seriously considered suicide because of your alcohol drinking habit	77 (100%)	0 (0%)	77 (100%)

In this study it was found that there are some South African dentists that worry at times that they may be using too much alcohol or too often, and there are dentists that have shown bad behaviour due to alcohol use. Neglecting to do daily routine tasks, such as shopping etc., and neglecting their personal

appearance (e.g. clothing and shaving) due to alcohol use, among dentists, is a reality. What is significant is that some of the respondents were involved in a motor car or any other accident due to their alcohol consumption, and that a small percentage has been convicted in a court of law for something that they did under the influence of alcohol.

5.6.8 The affect of alcohol on the functioning in the respondent’s personal life

In this study, it was found that alcohol did not have a significant influence on the functioning in the respondents’ personal life in respect of relationships with their family, marriage, sex life, social life, sport, religion, and finances. Table 18 indicates the frequency and percentage of the respondents’ functioning in their personal lives that have been affected by alcohol in respect of the above mentioned aspects.

Table 18: How alcohol has affected the functioning in the respondents’ personal life in respect of: (n = 77).

How alcohol has affected the functioning in the respondents’ personal life	No response: f(%)	Answered positively f(%)	Total
Relationships with their family	70 (90.91%)	7 (9.09%)	77 (100%)
Marriage	73 (84.81%)	4 (5.19%)	77 (100%)
Sex life	74 (96.10%)	3 (3.90%)	77 (100%)
Social life	71 (92.21%)	6 (7.79%)	77 (100%)
Sport	73 (94.81%)	4 (5.19%)	77 (100%)
Religion	74 (96.10%)	3 (3.90%)	77 (100%)
Finances	74 (96.10%)	3 (3.90%)	77 (100%)

When the respondents were requested to give other ways (other than listed in Table 18) of how alcohol has effected the functioning in their personal lives, they responded as follows: No response 73(94.81%), alcohol has affected the

relationship with my boyfriend / girlfriend / spouse one(1.30%), and three respondents made it clear that alcohol has never affected their functioning in their personal life.

However, this study made it clear that alcohol has affected the functioning in the respondents personal lives in respect of relationships with their family, marriage, sex life, social life, sport, religion, and finances, even though the percentages are slight

5.6.9 The affect of alcohol on the health of the respondents

From the literature discussed in chapter 2 of this thesis, it is clear that there are numerous health problems that one may encounter as a result of non-sensible alcohol use. In this study (Table 19), only a very small percentage of the respondents reported alcohol related health problems. None of the respondents reported that they have been diagnosed with alcohol related diseases, such as alcoholic liver disease or diabetes. Only one respondent one(1.30%) has seen a psychiatrist, psychologist, counselor or social worker due to psychosocial problems resulting from alcohol consumption, and only one respondent (1.30%) reported that he/she has been reported to the Medical and Dental Professions Board of HPCSA due to his/her alcohol drinking habits and has been admitted to a rehabilitation facility for alcohol abuse. However, three (3.90%) of the respondents reported that they have been advised to stop their alcohol drinking habits because it is affecting their health. When the respondents were requested to list other health problems due to alcohol use/abuse (other than listed in Table 19), two respondents reported that alcohol use/abuse has never affected their health in any way. The researcher assumes that these respondents do use alcohol sensibly, or even non-sensibly, but that it has never affected their health in any way. One of the respondents reported that he/she is a diabetic, but it is not alcohol related.

Thus, in this study, not many dentists reported alcohol related health problems. However, three of the respondents have been advised to stop their alcohol drinking habits because it is affecting their health.

Table 19: How alcohol use/abuse has affected the health of the respondents (n = 77). The respondents could choose more than one option.

How alcohol use/abuse has affected the health of the respondents	No response f(%)	f(%)	Total
Seen a psychiatrist, psychologist, counselor or social worker due to psychosocial problems resulting from alcohol consumption	76 (98.70%)	1 (1.30%)	77 (100%)
Been reported to the Medical and Dental Professions Board of HPCSA due to your alcohol drinking habits	76 (98.70%)	1 (1.30%)	77 (100%)
Been admitted to a rehabilitation facility for alcohol abuse	76 (98.70%)	1 (1.30%)	77 (100%)
Been diagnosed with alcohol related diseases such as alcoholic liver disease, diabetes etc	77 (100%)	0 (0%)	77 (100%)
Been advised to stop your alcohol drinking habits because it is affecting your health	74 (96.10%)	3 (3.90%)	77 (100%)

Table 20: Other ways (not listed in table 19) of how alcohol has affected the health of the respondents (n = 77).

Other ways alcohol has affected the health of the respondents	f(%)
<i>No response</i>	74 (96.10%)
Alcohol use / abuse has not affected my health in any way	2 (2.60%)
I am a diabetic but it is not alcohol related	1 (1.30%)
Total	77 (100%)

5.7 A dentist's perspective on alcohol use, linked to the stress and strain of the dental profession

In this section, the respondents were requested to give their opinion on alcohol consumption among South African dentists linked to the stress and the strain of the dental profession. As can be seen in the results discussed up to now, the majority of dentists that responded do not link their own alcohol consumption to the stress and strain of their profession. They have a different view when it comes to alcohol consumption, linked to the stress and strain of the dental profession, in comparison with other dentists. What is also obvious in this section is that only a small percentage of the respondents did not respond in this section when compared to no response, or do not use alcohol, when it came to alcohol use by the respondents themselves. Next, the viewpoint of the respondents on alcohol consumption, linked to the stress and strain of the dental profession, is discussed.

5.7.1 The viewpoint of the respondents concerning alcohol consumption among dental students

Table 21 indicates the viewpoint of the respondents concerning alcohol consumption among dental students. Twenty-seven of the respondents (35.06%) indicated that dental students consume alcohol to relieve the stress and strain of the dental curriculum, and 50(64.94%) of the respondents indicated that they believe that the habit of alcohol use among dentists begins early in their career at dental school. According to these findings, the researcher agrees with Mac Donald and Mac Innis (1991: 873-76), who warned that the prevention of chemical dependency, among dentists, must begin in the curricula of dental schools, because chemical dependency can be prevented if it is recognized early enough.

Table 21: The viewpoint of the respondents concerning alcohol consumption among dental students (n = 77).

The viewpoint of the respondents concerning alcohol consumption among dental students	No response f(%)	f(%) that agreed	f(%) that disagreed	Total
Dental students consume alcohol to relieve the stress and strain of the dental curriculum	5 (6.4%)	27 (35.06%)	45 (58.44%)	77 (100%)
The habit of alcohol use among dentists begins early in their career at dental school	4 (5.19%)	50 (64.94%)	23 (29.87%)	77 (100%)

5.7.2 The viewpoint of the respondents concerning alcohol consumption among dentists

Table 22 indicates the viewpoint of the respondents concerning alcohol consumption among dentists. Thirty-two (41.56%) of the respondents reported that they believe that some dentists consume alcohol to relieve the stress of keeping to difficult appointment schedules, 54(70.13%) reported that they believe that some dentists consume alcohol to relieve the stress of financial pressures, 28(36.36%) reported that they believe that some dentists consume alcohol to relieve the stress of staff-related problems, and 52(67.53%) reported that they believe that some dentists consume alcohol to relieve the stress of practice management in general. These findings concur with those of Meyers and Meyers (2004: 89-93), who conducted a nationwide anonymous cross-sectional survey among general dental practitioners in the UK to assess overall stress, work-stress, and health of UK dentists, and found that over a third of general dental practitioners are overweight or obese, and that alcohol use is associated with work-stress among dentists.

The researcher is of the opinion that the possibility exists that some of the respondents could be projecting here with regard to their own situation.

Table 22: The viewpoint of the respondents concerning alcohol consumption among dentists (n = 77).

The viewpoint of the respondents concerning alcohol consumption among dentists	No response f(%)	Yes f(%)	No f(%)	Total
Consume alcohol to relieve the stress of keeping to difficult appointment schedules	12 (15.58%)	32 (41.56%)	33 (42.86%)	77 (100%)
Consume alcohol to relieve the stress of financial pressures	9 (11.69%)	54 (70.13%)	14 (18.18%)	77 (100%)
Consume alcohol to relieve the stress of staff related problems	14 (18.18%)	28 (36.36%)	35 (45.45%)	77 (100%)
Consume alcohol to relieve the stress of practice management in general	8 (10.39%)	52 (67.53%)	17 (22.08%)	77 (100%)

5.7.3 The viewpoint of the respondents concerning social anxiety, occupational stress and personal factors, linked to alcohol consumption, among dentists

The respondents were asked if they believe that dentists who experience high social anxiety, deliberately take alcohol to cope with their social fears, that dentists experience more occupational stress than the other health professionals, that dentists consume more alcohol than other health professionals, that dentistry is not the glamorous job that it is made out to be, and that personal factors may be much stronger predictors for hazardous alcohol consumption among dentists than practising dentistry as such.

Table 23 indicates the response to these questions. Forty-one (53.25%) of the respondents believe that dentists who experience high social anxiety, deliberately take alcohol to cope with their social fears, and 60(77.92%) of the respondents believe that dentists experience more occupational stress than the other health professionals.

According to these findings, the researcher agrees with Thomas, Randall and Carrigan (2003: 1937-43), who reported a high rate of alcohol consumption among individuals with high trait anxiety, which can lead to alcohol dependency in vulnerable individuals. Nineteen (24.68%) of the respondents reported that they believe that dentists consume more alcohol than other health professionals, and 54(70.13%) reported that dentistry is not the glamorous job that it is made out to be.

The literature confirms these findings. Kenna and Wood (2004: 107-16) reported that dentists consume more alcohol than other health professionals. The majority of the respondents 56(72.73%) believe that personal factors may be much stronger predictors for hazardous alcohol consumption among dentists than practising dentistry as such. The literature also confirms these findings. In a study that was conducted among South-Australian dentists it was shown that existing personal vulnerability factors may be much stronger predictors for hazardous alcohol consumption (Winwood, Winefield and Lushington, 2003: 102-109).

Table 23: The viewpoint of the respondents concerning social anxiety, occupational stress and personal factors, linked to alcohol consumption, among dentists (n = 77). The respondents could answer as many questions as they wanted.

Social anxiety, occupational stress and personal factors	No response f(%)	Yes: f(%)	No: f(%)	Total
Dentists who experience high social anxiety, deliberately take alcohol to cope with their social fears	10 (12.99%)	41 (53.25%)	26 (33.37%)	77 (100%)
Dentists experience more occupational stress than the other health professionals	4 (5.19%)	60 (77.92%)	13 (16.88%)	77 (100%)
Dentists consume more alcohol than other health professionals	12 (15.58%)	19 (24.68%)	46 (59.74%)	77 (100%)
Dentistry is not the glamorous job that it is made out to be	7 (9.09%)	54 (70.13%)	16 (20.78%)	77 (100%)
Personal factors may be much stronger predictors for hazardous alcohol consumption among dentists than practising dentistry as such	6 (7.79%)	56 (72.73%)	15 (19.48%)	77 (100%)

To a related question the respondents significantly reported 45(58.44%) that the so-called “conspiracy of silence” where colleagues and friends are reluctant to report dentists who have a dependency problem, does indeed exist in the dental profession, and 54(70.13%) of the respondents reported that close relatives, especially spouses of dentists with hazardous alcohol-drinking habits, hide the fact because they are scared of the consequences. The researcher also believes that the so-called “conspiracy of silence” where colleagues and friends are

reluctant to report dentists who have a dependency problem, does indeed exist in the dental profession. The researcher agrees with Clarno (1986: 45-53) that the consequences of alcoholism and drug dependency within the dental profession can be progressive and potentially fatal for the dentist, and denial by colleagues, family, friends, professionals and office personnel, can perpetuate the illness of the dentist.

In conclusion of the view of the respondents concerning alcohol use, linked to the stress and strain of the dental profession, the respondents reported the following:

- Dentists sometimes deliberately stay away from their practices because they are scared that it will be noticed that they had too much to drink 38(49.35%).
- Some dentists have been reported to the HPCSA because of alcohol use 47(61.04%).
- Some dentists perform dental procedures under the influence of alcohol 46(59.74%).
- Some dentists use tranquilizers such as the benzodiazepines to be able to cope with the stress and strain of dentistry because the signs of alcohol are too visible 49(63.64%).

According to the above findings, the researcher agrees with Kenna and Wood (2004: 107) that alcohol use by dentists may be independent of income and related more to the nature of the profession. The researcher had a conversation with Mr. T.C. Molokomme, a member of the Health Committee of the HPCSA concerning dentists that have been reported to the Council for alcohol related problems. According to Molokomme (2007), for the past four years, seven dental practitioners per year have been reported to the Council for alcohol related problems, giving a total of 28 for the last four years. In this study, it was found that only one of the respondents of the quantitative phase was reported to the HPCSA for alcohol related problems, however, 47(61.04%) of the respondents

believe that some dentists have been reported to the HPCSA because of alcohol use.

5.8 Future recommendations

Table 24 indicates recommendations from the respondents of what should be included in the dental curricula to prepare dental students to manage stress in dental practice, Table 25 indicates recommendations for dentists to manage or alleviate stress better, and Table 26 indicates other recommendations specified by the respondents. These recommendations are incorporated in chapter 7 (summary, conclusions and recommendations) where relevant. The following themes (recommendations) emerged from the questionnaires.

Table 24: Recommendations of what should be included in dental curricula to prepare students to manage stress in dental practice.

Recommendations of what should be included in dental curricula	<i>f</i>	%
Advanced practice management modules (Business administration)	16	20.78
A financial management module	13	16.88
A time management module	1	1.30
Self-awareness and cognitive behaviour modules	2	2.60
Teach dental students how to balance their life style	2	2.60
How to deal with patient expectations	2	2.60
People skills – How to deal with different people	2	2.60
Dental students must spend time in a private practice	3	3.90
A module on substance abuse and the harmful effects of it	5	6.49
A module on life skills – Social and family	5	6.49
A stress management module – How to cope with stress	11	14.29
Patient interaction early in the dental curriculum	1	1.30
Counselling facilities for dental students – Psycho-social support	3	3.90
Awareness of the reality of practice – Unpaid claims and fraudsters and practice expenses	1	1.30
A module on communication skills	1	1.30
Advanced modules in psychology and sociology	2	2.60

Organized study and talk student groups	1	1.30
Nothing new should be included - coping with stress is individual	1	1.30
Teach students that invading another's personal space is stressful	1	1.30
Modules on medical aid procedures, codes and tariffs	2	2.60
Time for exercise (gym) during lectures and clinical sessions	1	1.30

Table 25: Recommendations for dentists to manage or alleviate stress better.

Recommendations for dentists to manage or alleviate stress better	<i>f</i>	%
Socialize more	1	1.30
Identify stress factors and deal with them positively	1	1.30
Take time off and reduce working hours to do enjoyable things	10	12.99
Physical training – Sport and exercise	23	29.87
Recreational activities and hobbies	7	9.09
Have realistic expectations	2	2.60
Refer difficult dental procedures to a specialist – Share responsibility	2	2.60
Manage your staff and plan your day by day routine	2	2.60
Accurate financial planning	4	5.19
Dentistry must not be your only source of income – Have additional ways	1	1.30
Join colleague support groups – Discuss occupational stress	4	5.19
Make use of financial planners – Dentists are not trained in this field	2	2.60
Proper time and practice management	3	3.90
Delegate responsibilities – Don't try and do everything yourself	2	2.60
Patient booking must be realistic – Don't overbook yourself	2	2.60
Remuneration must come from quality dental work not from work loads	1	1.30
Dentists must collaborate with medical aids for better and faster payments	2	2.60
Contract out – No medical aid payments – Only direct cash payments	2	2.60
Dentists must learn to develop a positive attitude towards life	1	1.30
Religion – Believe in a higher power that will assist you	2	2.60
Seek professional help – Go for counselling	1	1.30
If dentistry is too stressful consider another way to generate income	1	1.30
Consider to practise in a group practice or with a partner (associate)	1	1.30
Lead a healthy lifestyle in general – Correct nutritional intake etc.	2	2.60
Dentists must lower their expectations	1	1.30
Dentists must not be in competition with their colleagues	1	1.30
Plan your practice like any other business	1	1.30

Table 26: Other recommendations specified by the respondents.

Other recommendations	<i>Freq</i>	%
Dentists must develop time management strategies	1	1.30
Dentists may use alcohol to socialize – Not to drink their stress away	2	2.60
Dentists must arrange team building sessions with their staff members	4	5.19
Staff members in a dental practice must develop problem solving skills	4	5.19
Dentists must move away from the culture that it is “cool” to drink	5	6.49
Dentists must deal effectively with medical aids – Appoint support staff	1	1.30
Treat your practice as any other business and manage it properly	2	2.60
Dentists must have hobbies to relieve their stress levels	4	5.19
Arrange meetings with staff members so that problems can be discussed	2	2.60
Dentists must know that stress is part of life and he/she must cope with it	1	1.30
Occupational stress begins at dental school but increases in practice	2	2.60
Ban alcohol - It causes harm, death and disintegration of families	2	2.60
Dentists in private practice must work in partnerships	2	2.60
The reality of dentistry must be spelt out to students in their 1 st year	3	3.90
Dentists must communicate with their colleagues	2	2.60
Dentists must be engaged in a good exercise programme	1	1.30
Test a student for stress tolerance before enrolling him at dental school	2	2.60
Dentists must be made aware of changes e.g. fees and structures	2	2.60
A dentist must love what he does, his profession and his patients	1	1.30
Do not overload yourself for the sake of money	2	2.60
Contract out and do not charge medical aid fees for procedures	1	1.30
Alcohol must not be allowed at CPD courses	1	1.30
I have never come across a dentist with an alcohol problem	1	1.30

5.9 Summary of the quantitative findings

The systematic sampling method for the quantitative approach was utilized with a response rate of 70%. The quantitative research designs are placed in two broad categories, namely the experiments and surveys. In this study, the researcher utilized the quantitative-descriptive (survey) design by using a questionnaire to obtain data with regard to biographical information, background

information, stress and coping with stress, history of alcohol use or abuse (quantity and frequency of alcohol use) and dysfunction as a result of alcohol use among a selected sample of South African dentists. Finally, a section on a dentist's perspective on alcohol use linked to the stress and strain of the dental profession with recommendations were included in the questionnaire.

The majority of the respondents were male, and the majority of the respondents were between 30-49 years of age. The majority of the respondents mostly grew up and attended school in the Gauteng province of SA; however, all the provinces of SA were represented to a lesser degree. All the population groups of SA were represented, with the majority being white and black dentists. The majority of the respondents were general dental practitioners in private practice and some were dental specialists in private practice. The rest were employed either as dentists or dental specialists in the health services or at a dental school, and one respondent is retired. Most of the respondents qualified as dentists from the University of Pretoria and the previously named Medical University of Southern Africa, however all the South African dental schools were represented. The majority of the respondents had no post graduate qualifications. The rest received post graduate qualifications from South African dental schools and from dental schools outside the RSA .

The prevalence of a stepmother or stepfather, or growing up with family members were reported insignificantly to have an influence on the objectives of this study. The number of towns, cities, or villages where the respondents lived, and the number of primary and secondary schools they attended during their scholastic years, did not have a significant influence on their alcohol consumption linked to the stress and strain of their profession, because the majority only lived in one town, city or village, and only attended one primary and one secondary school during their scholastic years. According to the findings of this study the researcher is of the opinion that the respondents' health and financial status, as

children, do not affect their ability to cope with stress, or have an influence on their way of coping with stress.

When alcohol consumption of the respondents was compared to alcohol consumption of their parents / guardians, no significant difference ($p = 0.6171$, thus $> 0,05$) was found. This indicates that the alcohol consumption of the respondents, more or less, correlated with the alcohol consumption of their parents / guardians who raised them, indicating that genetics and environment have an effect on the quantity of alcohol use/abuse.

In this study, it was found that a small percentage of the respondents' parent(s) / guardian(s) who raised them used prescription or street drugs on a regular basis (1.30% - 16.88%). Only one of the respondents reported that he/she has ever had a problem with prescription or street drugs.

The majority of the respondents reported a good relationship with their parents / guardians during their childhood and the majority of the respondents were in leadership positions during their scholastic years with outstanding school achievements. A smaller percentage reported problematic circumstances during their childhood and school career such as emotional problems, problems at school, e.g. having difficulty in socializing, learning and discipline, family problems, and easily influenced by friends. What is significant is the fact that some of the respondents reported that they experimented with drugs at school and 18.18% reported that they experimented with alcohol during their scholastic years.

The researcher is of the opinion that alcohol use/abuse among dentists starts at dental school. The stress levels as a result of a demanding dental curriculum are very high, and some dental students consume alcohol as a coping mechanism. In this study, it was found that 59.74% of the respondents used alcohol as a student, and 9.09% used and abused alcohol as a student. The majority of the

respondents reported that they used alcohol during their university days only to socialize, however, some reported that they used alcohol, as a student, for relaxation as a result of a demanding dental studies. Although the majority of the respondents reported that they used alcohol as a way of socializing only, this study indicates that dental students also use alcohol as a coping mechanism.

There are more intense, and less intense stressors among South African dentists. The more intense stressors are: demands and expectations of patients, irregular, long working hours, management and business demands, financial issues, emotional and physical exhaustion, balance between professional and family life, minimal time for family and personal recreation because of the profession, the fear of legal action, and time management. The less intense stressors are: working in close physical range of the patient (invasion of your personal space), no built in social psychological support system in the profession, fear of risk of HIV and other infections, safety issues e.g. physical injury, fear of loss of patients to other dentists, and fear of dental technologists' work not being on time or up to standard.

A great number (35.06%) of the respondents currently use alcohol for the relaxing and calming effect it has. However, a variety of other reasons for using alcohol were reported in very small percentages, e.g. as a coping mechanism, relief of depression / mood disorder, relief of frustration, relief of total exhaustion, relief of grief (emotional pain), relief of anxiety, providing self-confidence, escaping from daily work stress, relieving emotional stress resulting from the dental profession, to give courage to perform a difficult dental procedure, to give courage to perform a dental procedure on a difficult patient, to perform a dental procedure on a high profile patient that is your superior, to get rid of a hangover before treating patients, and to cope with stress created by the close contact with patients (invading their personal space).

The majority of the respondents do physical exercise to reduce their stress levels and a great number of dentists socialize with friends to reduce their stress levels. It can be assumed that some of these dentists consume alcohol as part of socializing with friends. However, only 16.88% of the dentists reported that they actually use alcohol to reduce their stress levels. Other stress relieving methods that were reported are: talking to family and friends about stress, hunting, fishing and shooting competitions, read books / magazines, having sex, video games, over exercise for stress relief, visiting the theatre and art galleries, shopping, sleeping, relax with family (family outings), gardening, regular holidays, and religion.

The researcher found that there were no significant difference between the stress levels of dentists in private practice and stress levels of dentists in other sectors such as the health service and lecturers at dental schools. The researcher classified low stressed dentists as those who reported 0-4 areas of stress and high stressed dentists as those who reported 5-14 areas of stress. In this study the two categories were the stress category (low or high) and the category, are you in private practice (yes or no). There were no significant association between the two groups ($p = 0.5527$, thus > 0.05).

In this study, it was found that 32.47% of the respondents had 5 or more drinks at least on 1 occasion per month in the past year and that 12.99% of the respondents had 5 or more drinks at least on 5 occasions per month in the past year. According to the literature this means that 32.47% of the respondents are heavy episodic alcohol users and 12.99% are heavy alcohol users. The majority of the respondents never drink alcohol on weekdays or they only drink occasionally on weekdays. Of those who drink on a weekday, 28.57% drink in the sensible alcohol limit of not more than 2 drinks for women and not more than 3 drinks for men per day. The South African Food Based Dietary Guidelines on sensible drinking is no more than 2 standard drinks per day for women and 3 standard drinks per day for men (Alcohol and Drug Abuse Reseach..., [Sa]).

What is concerning is that some of the respondents reported that they drink every day of the weekdays (Monday – Thursday) and the amount they drink ranges between 3-4 and 7-11 drinks on such a drinking day. Only a small percentage of the respondents reported that they never drink on weekend days (Friday – Sunday). However, of those who use alcohol on weekend days, the majority drink in the sensible limit of 2 drinks for females and 3 drinks for males per day. However, 20.78% of the respondents drink 3-4 drinks on a weekend day and 9 (11.68%) drinks 5-11 drinks on a weekend drinking day. The majority of the respondents in this sample of South African dentists consider themselves as non-drinkers and light-social drinkers. However, none see themselves as problematic drinker but one respondent sees him/herself as an alcohol dependent. When alcohol consumption of male dentists was compared with alcohol consumption of female dentists there was no significant difference ($p = 0.1632$, thus > 0.05).

In this study, there is a statistically significant difference between the dentists with less areas of stress (low stressed dentists) and those who reported more stress areas (high stressed dentists) with regard to their alcohol consumption ($p = 0.0026$, thus < 0.05). The dentists that reported less areas of stress consumed more alcohol than the dentists who reported more areas of stress. This can be attributed to the fact that a great number of the dentists reported that they perceive high stress levels but do not use alcohol, or they only use alcohol as a way of socializing.

The majority of the respondents reported that the use of alcohol has not affected their work as a dentist in any way. However, very small percentages of the respondents reported that alcohol use has affected their work as a dentist as follows: getting behind in work due to alcohol consumption, call in sick or late due to alcohol consumption, cannot get along with people due to alcohol consumption, neglect their work due to alcohol consumption, cancel patients due

to alcohol consumption, and provide less than their best patient care due to alcohol consumption.

The majority of the respondents reported that alcohol has not affected their personal lives in any way. However, 11.69% reported that they worry at times that they may be using too much alcohol or too often, 10.39% reported that they have shown bad behaviour due to alcohol use, 2.60% neglect to do daily routine tasks such as shopping due to alcohol use, and 2.60% neglect their personal appearance (clothing, shaving) due to alcohol use. What is significant is that 6.49% of the respondents were involved in a motor car or any other accident due to their alcohol consumption, and that 2.60% have been convicted in a court of law for something that they did under the influence of alcohol. In this study, none of the respondents have seriously considered suicide because of their alcohol drinking habit. It was also found that alcohol did not have a significant influence on the functioning in the respondents' personal life in respect of relationships with their family, marriage, sex life, social life, sport, religion, and finances. However, small percentages (less than 10%) reported problems in these respects.

None of the respondents reported that they have been diagnosed with alcohol related diseases. Only a very small percentage of the respondents have seen a psychiatrist, psychologist, counselor or social worker due to psychosocial problems resulting from alcohol consumption, and only one respondent (1.30%) reported that he/she has been reported to the Medical and Dental Professions Board of the HPCSA due to his/her alcohol drinking habits and has been admitted to a rehabilitation facility for alcohol abuse. However, three (3.90%) of the respondents reported that they have been advised to stop their alcohol drinking habits because it is affecting their health.

As can be seen, in the results discussed up to now, the majority of dentists that responded do not link their own alcohol consumption to the stress and strain of their profession. However, in comparison with other dentists, they have a

different view when it comes to alcohol consumption, linked to the stress and strain of the dental profession. A great number the respondents indicated that dental students consume alcohol to relieve the stress and strain of the dental curriculum, and the majority of the respondents indicated that they believe that the habit of alcohol use among dentists begins early in their career at dental school. The majority of the respondents reported that they believe that some dentists consume alcohol to relieve the stress of keeping to difficult appointment schedules, to relieve the stress of financial pressures, to relieve the stress of staff-related problems, and to relieve the stress of practice management in general.

The majority of the respondents believe that dentists who experience high social anxiety, deliberately take alcohol to cope with their social fears, and 77.92% of the respondents believe that dentists experience more occupational stress than the other health professionals. Nineteen (24.68%) of the respondents reported that they believe that dentists consume more alcohol than other health professionals, and 70.13% reported that dentistry is not the glamorous job that it is made out to be. The majority of the respondents believes that personal factors may be much stronger predictors for hazardous alcohol consumption among dentists than practising dentistry as such.

Also significantly reported in this study is that the majority of the respondents believe that the so-called “conspiracy of silence”, where colleagues and friends are reluctant to report dentists who have a dependency problem, does indeed exist in the dental profession. The majority of the respondents also reported that they believe that dentists sometimes deliberately stay away from their practices because they are scared that it will be noticed that they had too much to drink, some dentists have been reported to the HPCSA because of alcohol use, some dentists perform dental procedures under the influence of alcohol, and some dentists use tranquilizers such as the benzodiazepines, to be able to cope with the stress and strain of dentistry because the signs of alcohol use are visible.

Future recommendations made by the respondents concerning: what should be included in the dental curricula to prepare dental students to manage stress in dental practice, recommendations for dentists to manage or alleviate stress better, and other recommendations specified by the respondents are discussed in chapter 7 (summary, conclusions and recommendations).