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A PROFILE ON ALCOHOL CONSUMPTION AMONG SOUTH AFRICAN DENTISTS – A DENTIST'S PERSPECTIVE

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I declare that this thesis / dissertation is my own original work. Where secondary material is used, this has been carefully acknowledged and referenced in accordance with university requirements.

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Abstract

A profile on alcohol consumption among South African dentists – A dentist's perspective: JH Olivier

Background

This study investigated alcohol use linked to the stress of a selected sample of South African dentists. The only other related topic in South Africa, that the researcher could find, was done in 1996 at the University of Stellenbosch. The literature suggests that prevalence studies of substance use and abuse rarely include dentists.

Methods

A dominant quantitative approach with a less dominant qualitative approach was utilized. The quantitative-descriptive design (survey with a questionnaire) was used to obtain data with regard to biographical/background information, stress and coping, quantity and frequency of alcohol use, and dysfunction as a result of alcohol use among a randomly selected sample of 110 South African dentists with a response rate of 70%. The respondents' perspective on alcohol use linked to the stress of the dental profession with recommendations were also obtained.

For the qualitative data collection, the researcher utilized the collective case study. He planned semi-structured interviews with an interview schedule with five dentists that have already had treatment for alcohol abuse or were self-characterized as problem drinkers. Unfortunately, two of the respondents who characterized themselves as heavy alcohol users died before they could be interviewed. Because of ethical reasons and the sensitivity of the topic they could not be replaced.

Findings

The quantitative study indicated that: (1) the respondents experienced significant amounts of occupational stress (2) the majority of the respondents do physical exercise to reduce their stress (3) a great number of respondents socialize with friends to reduce their stress (4) some respondents actually use alcohol to reduce their stress (5) stress levels of the respondents in private practice and stress levels of the respondents in other sectors are the same (6) alcohol consumption of male and female dentists is the same (7) respondents who reported less areas of stress consumed more alcohol than those who reported more areas of stress (8) a great number of the respondents experience high stress levels but do not use alcohol, or they only use alcohol to socialize (9) less than 3% of the respondents reported that alcohol use has affected their work as a dentist (10) the majority of the respondents believe that some dentists consume alcohol as a coping mechanism concerning social anxiety, occupational stress and personal factors.

The qualitative study indicated that: (1) the habit of alcohol use that may lead to alcohol dependency starts at university (2) the respondents, who had treatment for alcohol dependency, experienced high levels of occupational stress (3) the respondents link their dependency directly to the stress and strain of their profession.

Conclusions

There are more intense and less intense stressors among South African dentists and there are some dentists that consume alcohol to relieve the stress and strain of their profession. However, the majority only use alcohol as a way of socializing. Less than 3% of the respondents reported that alcohol use has affected their work as a dentist.

Recommendations

Modules on coping mechanisms linked to the stress and strain of the dental profession should be included in the curricula at dental schools.

The compulsory CPD programme of the HPCSA should include stress management and healthy coping mechanism courses.

Key words:

Dentists
Occupational stress
Alcohol consumption
Quantitative approach
Qualitative approach
Survey
Case study
Social anxiety
Personal factors
Stress management.

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CHAPTER 1

GENERAL INTRODUCTION

1.1 Introduction

The researcher believes that, in all professions, there are unique problems and problematic circumstances facing the people who are involved. Dentistry is not excluded from this phenomenon. Dentists experience stressful situations every day, and have to deal with these in a very professional manner. A dentist is regarded as a highly-skilled professional in his field and the expectations of his patients puts him in a very challenging but vulnerable position. 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 successfully 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. The researcher experienced that some dentists consume alcohol to relieve stress and strain caused by their profession. At first this measure might be beneficial to reduce the effects of stress and strain on the dentist's emotions, but for some dentists, this measure leads to dependency that has devastating consequences.

Through the ages, alcohol and other chemical substances have been used to relieve physical and emotional pain (Erlank, 2002: 01). Unfortunately, even if chemical substances such as alcohol are used for good reasons, the use of these substances can lead to dependency on such substances. Erlank (2002: 01) claims that substance dependency is a universal phenomenon that does not

distinguish between age, race, status, gender, or title, and substance use, abuse and dependency may occur regardless of a person's occupation. Dentists are definitely not an exception to this rule. According to Erlank (2002: 01), the potential of dependency to a substance was only recognized in the late 19th century. Alcohol is easily available, and dentists do not need to abuse the authority provided by their profession to obtain alcohol. The researcher believes that alcohol is commonly used as an emotional pain reliever in the health professions, because in order to obtain other addictive substances, medical practitioners and dentists and even other health professionals have to abuse their professional rights to prescribe drugs in order to obtain the substances.

Kenna and Wood (2004: 107-16) reported that dentists consume more alcohol than other health professionals, but when compared to the general population in the USA, health professionals appear to take less alcohol. They found that when methodologically rigorous studies on alcohol and other drugs were performed involving the dental profession, the researchers focused exclusively on dental students and early dental career practitioners. Kenna and Wood (2004: 107-16) supported the findings of Hanks and Bissel in 1991, that little meaningful data are available on alcohol consumption among dentists in general, and they found that prevalence studies of substance use and abuse rarely included dentists. They also found that much of the data pertaining to dentists on alcohol consumption have largely been based on review articles, retrospective analyses of treatment seeking dentists, and qualitative studies.

The researcher personally experienced that social anxiety can be a major factor that some dentists have to cope with. Apart from the high occupational stress levels that the dentist has to cope with, there is also the factor of social interaction between the patient and the dentist to make a dental appointment more comfortable for the patient. Thomas, Randall and Carrigan (2003: 1937-43) reported a high rate of alcohol consumption among individuals with high trait anxiety, which can lead to alcohol dependency in vulnerable individuals. They

found that individuals who experience high social anxiety, deliberately take alcohol to cope with their social fears, and while alcohol is only moderately effective at reducing their anxiety, it is sufficient to allow them to endure social situations. Osborne and Croucher (1994: 52) reported that the social interaction that exists between a dentist and a patient is an occupational-related stress factor, which may produce burnout in dentists. According to the above authors, burnout is a syndrome of emotional exhaustion, depersonalization and reduced personal accomplishment that can occur in individuals whose work involves close personal contact with their clients.

A lack of career perspective among Dutch dentists appeared to be the stress factor most strongly related to burnout, and in Amsterdam it was reported that dentists with a high burnout risk exhibit unhealthy behaviour such as increased alcohol consumption and unhealthy diets (Gorter, Eijkman and Hoogstraten, 2000: 261-67).

In the researcher's experience there are many stress factors that a dentist has to cope with, and the literature confirms this. In a study conducted as far back as 1984, O'Shea, Cora, and Ayer reported that an exploratory factor analysis led them to hypothesize six sources of stress among dentists, namely: patient compliance, pain and anxiety, interpersonal relations, the physical strain of work, economic pressures, third party constraints, and the strain of seeking ideal results. They further reported that dentists use a variety of ways to cope with their stress, but some do nothing to relieve their stress (O'Shea, Cora and Ayer, 1984: 48-51).

Because it is generally accepted that dentistry is a very stressful profession, a study was conducted in South-Australia to investigate stress levels and alcohol consumption among South-Australian dentists. This study revealed that dentistry is well recognized as a stressful profession, and that there are conflicting views of how such stress contributes to hazardous drinking among dentists. This study

concluded that dentists suffer high levels of occupational stress, and that stress and hazardous alcohol drinking are present among South-Australian dentists to a significant extent. During this study, it was found that hazardous alcohol consumption among certain dentists, especially male dentists and dentists in rural areas, were up to four times higher than that of the average South-Australian population. However, the study revealed that existing personal vulnerability factors may be much stronger predictors for hazardous alcohol consumption (Winwood, Winefield and Lushington, 2003: 102-109).

Stress and health problems among dentists were determined by Randkin and Harris (1990: 2-8). They reported that dentists are vulnerable to health problems due to the stress associated with the profession, but most of the literature on the stress that dentists experience is based on opinions rather than systematic research. Randkin and Harris (1990: 2-8) reported that dentists are reasonably healthy and that most dentists, male or female, use alcohol or drugs in moderation, but male dentists are more likely to consume alcohol and both sexes use alcohol more frequently than other drugs.

In 1996, 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. They reported that the private South African dental practitioner experiences many stressors, of which financial issues and time-scheduling procedures are listed as the most important. They identified other stressors, such as patients' beliefs that dentists are pain inflictors, working with children, treating nervous patients, concerns about the future, and worrying about the oversupply of dentists. They also found that stressors which pose coping problems among South African dentists are staff-related problems, difficulty in keeping appointment schedules, working under constant time pressure, the repetitive nature of the work, feeling isolated, and the possibility of contracting

infectious disease such as HIV. In this study, it was concluded that a fairly high number of dentists use analgesics on a regular basis, a substantial number of dentists have marital problems, but less dentists have severe interpersonal problems with their children, and that a substantial percentage of dentists have severe problems in other personal relationships. An important fact that was discovered in the study is that dentists experience a severe lack of social involvement and outside interests and that 10.23% of the private dental practitioners and 4.76% of the non-private practitioners reported severe suicide ideation (Moller and Spangenberg, 1996: 347-57).

Meyers and Meyers (2004: 89-93) 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 believes that uncertainty and the feature credibility of the dental profession may also be a stress concern among dentists that may lead to alcohol abuse. In a quantitative survey in the UK, where the objective was to identify new stressors in the past ten years, it was concluded that uncertainty about the future of the organization of dental care provision was the most important new pressure of work (Humphris and Cooper, 1998: 404-6).

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, because chemical dependency can be prevented if it is recognized early enough.

Marlatt *et al.* (1998: 604-15) conducted a randomized controlled trial that evaluated the efficacy of a brief intervention designed to reduce the harmful consequences of heavy drinking among high-risk college students. They developed a programme called "Basics for brief screening and intervention for college students" at the University of Washington. This programme is a preventive intervention for college students who drink alcohol heavily and have experienced, or are at risk of alcohol-related problems, such as poor class attendance, missed assignments, accidents, sexual assault, and violence. The programme style is empathetic, not confrontational or judgmental, and it reduces alcohol consumption and its adverse consequences. It also promotes healthier choices among young adults, and it provides important information and coping skills. They used two active areas of research in alcohol treatment to develop the programme, the cognitive-behavioural group treatment, and brief interventions in addiction treatment.

Very little substance dependency is reported to councils nationally or internationally. This phenomenon is called the "Conspiracy of Silence" that is unique to occupations (Lens and Van der Wal, 1997a: viii).

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 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 (Clarno, 1986: 45-53). Should a dentist become addicted to alcohol, there are

many difficulties which a dentist has to face when alcohol or drug dependency causes him or her to violate laws or the Dental Practice Act (Lyon, 1996: 69-71).

According to his observations, the researcher personally believes that close relatives, especially spouses of dentists with hazardous alcohol-drinking habits that result in consequences, do not report such dentists to the Health Professions Council of South Africa (HPCSA). The spouse of a dentist with an alcohol drinking problem will not seek help from the HPCSA, because of fear that the dentist will be deregistered, with financial implications for that family. However, a national strategy for managing impairment in students and practitioners registered with the Council was compiled by a work-group on impairment in students and practitioners of medicine and dentistry in 1996. This work-group resolved that the Medical, Dental and Supplementary Health Service Professions Act, 1974 (Act No. 56 of 1974) be appropriately amended to clearly distinguish between offences of an improper and disgraceful nature, and impairment on the part of registered persons. Procedures for dealing with impaired students and practitioners, registered with the Council, should differ from procedures dealing with practitioners and students, registered with the Council, who committed offences of improper and disgraceful nature (The Interim National Medical and Dental Council of SA, 1996: 3).

Research found that the most common impairments among dentists are cognitive impairment, physical disability, chemical dependency such as alcohol, and mental illness. It was reported that the most frequently cited cause of impairment for dentists is chemical dependency and that 70-90% of dentists who had reported to state rehabilitation committees in the USA had done so for chemical dependency (Giannandrea, 1996: 73-76).

Should dentists choose to use alcohol to relieve their stress and anxiety of occupational origin, there are many norms for alcohol consumption, as published by different authors, for example. Regular alcohol use is referred to as alcohol

use for 20 or more days per month in the past year (Hudges *et al*, 1992: 2333-39). Heavy episodic drinking refers to drinking five or more alcoholic drinks on one occasion at least once a month, and heavy alcohol use means drinking five or more drinks on one occasion at five occasions a month (National Survey on Drug Use and Health, 2003: 3836). Heavy and constant alcohol use includes either heavy alcohol use or two or more alcoholic drinks per day during the past year or self-characterization as a problem drinker (Mc Auliffe *et al*, 1991: 177-82).

The Department of General Practice at the Health Science Centre of the University of Texas in Houston believes that chemical dependency is a devastating disease and unless some form of intervention and treatment takes place, it will ultimately destroy a person's life. They also believe that dentists are not immune to this malady and therefore the Texas Dental Peer Assistance programme was formed to assist dentists who have a chemical dependency problem (Jessee, 1993: 5-9). In their article "The alcohol-impaired dentist: an educational challenge", Peterson and Avery (1988: 743-48) reported that there is a need to strengthen educational efforts and to develop peer assistance networks to assist alcohol-impaired dentists. Newton and Gibbons (1996: 329-34) from the Unit of Dental Health of Guy's Hospital in London, reported that there are limited techniques for stress management among dentists and the techniques that exist are usually symptom-focused.

Should there be indications that an individual can become addicted to alcohol, Burch and Schneider (1999: 370-72) suggested that the most effective tool for alcohol-consumption screening is a thorough history of the individual's drinking behaviour. Such an instrument must be designed to identify patterns of alcohol-related difficulties, such as physical and mental health problems, family life problems, problems with legal authorities, and employment. They suggested using a protocol that was developed by the National Institute on Alcohol Abuse and Alcoholism to classify these individuals as at-risk alcohol drinkers, problem alcohol drinkers or alcohol dependents. They recommend that the severity of the

alcohol problem and the patient's readiness to change determine whether intervention is needed.

On numerous occasions over a period of many years, the researcher has attended intervention sessions on alcohol consumption where he actually had conversations on alcohol consumption with different people from different socio-economical backgrounds and occupations, including dentists (SANCA, Staanvas Rehabilitation Centre, now called Stabilis Rehabilitation Centre). The researcher has also attended alcohol discussion groups for medical professionals where two dentists were present on occasions (Stabilis Rehabilitation Centre). This was done under the guidance of Mr. T. Visser (psychologist) and Dr. E. Erlank (social worker). The researcher has also had personal interviews with the late Dr. S. de Miranda (1994-1996) from SANCA, who specialized in drug addiction, particularly drug addiction in the health professions. The researcher also had in-depth conversations with Dr E Erlank (2006) from the Stabilis Rehabilitation Centre in Pretoria. Dr Erlank is of the opinion that this study is feasible. She specializes in chemical substance abuse, and coordinates an alcohol-consumption group that consists of medical practitioners**.** These experts have personally dealt with dentists who have experienced alcohol-related problems, and are of the opinion that a study on alcohol consumption among South African dentists will make a significant contribution.

1.2 Problem formulation

There are many definitions available in scholarly literature that define the term "problem formulation". Grinnell (1993: 22) defines a problem as a difficulty we are aware of and about which something ought to be done. According to Fouché (2002: 96), there are various sources for the identification of a research problem, such as observation of reality, theory, previous research, curiosity and supervision.

From the in-depth literature review which was undertaken for the purpose of the current study, it is clear that alcohol abuse among dentists does exist and that the demands of their profession contribute to it. However, a profile on alcohol consumption among South African dentists, and factors in the dental profession that may lead to excessive alcohol consumption and eventually dependency, is currently not available. Research conducted in South Africa by Moller and Spangenberg (1996: 347-57) revealed that 40% of South African dentists reported extremely high stress levels, irrespective of type of employment and that general drug use among South African dentists is low, but a fairly high number of South African dentists use analgesics regularly.

The literature indicates that although dentistry is recognized as a stressful profession, there are conflicting views as to what extent such stress contributes to hazardous alcohol consumption among dentists. A substantial amount of international research concerning factors in the dental profession that leads to substance dependency, including alcohol dependency among dentists, is available but relatively little is known concerning the use and abuse of alcohol among South African dentists.

The researcher has on various occasions attended meetings where intervention techniques for alcohol abuse were applied. At some of these meetings, there were dentists present who had an alcohol-dependency problem. While attending these intervention group meetings the researcher observed, over a period of many years, that the majority of dentists with chemical dependency do not reveal or realize that it is actually the stress and strain of their profession that has caused their dependency. They very seldom admit that it could be professional anxiety or social interaction with their patients that led them to use alcohol to cope with the demands of their profession. The researcher also attended individual meetings with therapists over a period of time and has come to the conclusion that many professionals do not know the actual factors linked to the dental profession that could lead to alcohol dependency. Should this information

be available, it will assist professionals to effectively treat dentists suffering from alcoholism.

The researcher feels that it will be to the advantage of the health professionals who are involved with the treatment and rehabilitation of dentists that suffer from chemical dependency and especially alcohol dependency, to construct a profile on alcohol consumption among dentists. The researcher is also of the opinion that should such a profile be available, it will help to construct intervention models, specifically for dentists suffering from alcohol dependency, or who are in the process of developing an alcohol-dependency problem.

The researcher has formulated the research problem as follows: It is well-recognized that dentistry is a very stressful profession, and there are conflicting views of how this occupational stress contributes to hazardous alcohol consumption among South African dentists. A complete profile on alcohol consumption among South African dentists is currently not available and the use of alcohol amongst dentists to relieve occupational stress and anxiety with an ultimate dependency problem has also not been reported. The researcher has attended intervention programmes and found that the actual factors linked to the dental profession that lead to alcohol dependency, are not addressed by counsellors due to a lack of knowledge concerning factors in the dental profession that can lead to alcohol use or abuse among dentists.

1.3 Purpose, goal and objectives

The current study focussed on the investigation of factors that cause stress, strain and anxiety among South African dentists, leading to alcohol use as a measure to relieve stress, strain and anxiety among these dentists. These findings could then be used to construct intervention models for alcohol dependency among dentists.

1.3.1 Purpose

According to the Concise Oxford Dictionary (1995: 1113), a purpose is "an object to be attained, a thing intended, the intention to act, resolution, determination".
The purpose of research can either be descriptive, exploratory, explanatory, or a combination thereof (Neuman, 2003: 28). This study was exploratory in nature. According to Bless and Higson-Smith (1995:20) exploratory research is conducted to gain insight into a situation, phenomenon, community, and individual.

This study was mainly exploratory in nature, in order to gain insight into alcohol consumption among South African dentists, because very little is known on alcohol consumption related to occupational stress among this group of dentists. However, a small descriptive component was included where the researcher has made recommendations for further research to develop intervention models specifically aimed at dentists with an alcohol dependency problem.

1.3.2 Goal

The Oxford Dictionary (1995: 580) defines a goal as the object of a person's ambition or effort, a destination, an aim. Fouché (2002: 108) uses Neuman's definition of a goal which basically states that the goals of research are exploratory, descriptive and explanatory.

The specific goal for this study was to explore alcohol consumption related to occupational stress and anxiety among South African dentists, by compiling a general profile on alcohol consumption among South African dentists.

1.3.3 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 the current study. Each of these objectives was 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 among South African dentists alcohol use, abuse, and dependency related to occupational stress and anxiety.
- To compile a profile on alcohol consumption among South African dentists.
- To make recommendations for dealing with alcohol dependency amongst dentists. These recommendations can 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.

1.4 Underlying research questions

The research questions should 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).

In this study the researcher hopes to answer 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 of coping, be utilized to recommend intervention models for alcohol abuse and dependency specifically among dentists?

1.5 Research approach

According to Fouché (2002: 365), there are two well recognized research paradigms namely the quantitative and qualitative paradigms. De Vos (2002: 365) describes Cresswell's combinations of these two paradigms. For this study, the researcher is of the opinion that the use of the dominant - less dominant model of Cresswell will provide the best results. In this model, Cresswell uses a dominant research approach, and incorporates a smaller, less dominant approach (De Vos, 2002: 365).

The researcher engaged in a dominant quantitative approach and less dominant qualitative approach with a limited number of informants. The advantage of this approach is that it presents a consistent paradigm picture in the study and still gathers limited information to probe in detail one aspect of the study (Creswell, 1994: 177).

1.6 Type of research

According to Bless, Higson-Smith and Kagee (2006: 44-45), the researcher's primary motivation is sometimes to contribute to human knowledge and understanding relating to a particular phenomenon. This is usually achieved by gathering more facts and information which enables existing theories to be challenged and new ones to be developed. The actual utility or application of the newly acquired knowledge is of little concern to the researcher. This kind of research is called basic research. At other times the researcher's primary motivation is 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 and in this way applied research may assist the community to overcome the problem or design interventions which will help to solve it.

In this study the researcher aimed at utilizing 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.

1.7 Research design and methodology

Grinnell (1993: 45) states that the research design is a plan or blue print of how the research is to be conducted. The research methodology refers to the

systematic methodological and accurate execution of the design (Fouché and Delport, 2002: 79).

1.7.1 The research design

1.7.1.1 The dominant quantitative research design

According to Fouché and De Vos (2002: 138), the quantitative research designs are divided into two broad categories, namely experiments and surveys. In this study, the researcher utilized the quantitative-descriptive (survey) design by using a questionnaire to obtain data. Cresswell (1994: 117) defines a survey design as follows: "A survey design provides a quantitative or numeric description of some fraction of the population, the sample, through the data collection process of asking questions of people. This data collection, in turn, enables a researcher to generalize the findings from a sample of responses to a population". The researcher constructed a questionnaire that would reflect the respondent's biographical details, alcohol consumption (use/abuse), dysfunction as a result of alcohol use/abuse, factors in the dental profession that cause the dentist stress, anxiety and emotional discomfort that could result in alcohol use/abuse, and background history, such as the alcohol consumption habits of the respondent's biological parents or guardians with whom he/she grew up.

1.7.1.2 The qualitative research design

Cresswell (1994: 145) describes the assumptions for the qualitative design as follows:

- The researcher is more concerned with the process rather than outcomes.
- The researcher is interested in meaning, e.g. how people make sense of their lives.
- The researcher is the primary instrument for data collection and analysis.

- The researcher physically goes to the people to observe.
- Qualitative research is descriptive.
- Qualitative research is inductive because the researcher builds theories and hypotheses from details.

The strategies of inquiry that could be used to design qualitative research are ethnographies, grounded theory, phenomenological studies, and case studies (Cresswell, 1994: 11). The researcher used a collective case study for qualitative data collection where semi-structured interviews with an interview schedule were conducted. Fouché (2002: 275) describes a case study as follows: "The exploration and description of the case takes place through detailed, in-depth data collection methods, involving multiple sources of information that are rich in context. These sources can include interviews, documents, observations or archival records". The researcher decided on semi-structured interviews with an interview schedule with dentists that have already had treatment for alcohol abuse.

1.7.2 Data-collection methods and techniques

The researcher collected data from a selective 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 (Pretoria), Krugersdorp and Johannesburg Metropolitan areas. For the qualitative method, the researcher scheduled semi-structured interviews with dentists who have already had treatment for alcohol abuse.

The instruments for data-collection for both of these paradigms were tested for validity and reliability. Quantitative research is accurate and reliable through validity and reliability. Qualitative research is accurate and reliable through verification (Cresswell, 1994: 5).

1.7.2.1 Quantitative data collection

Quantitative research data can be collected by means of questionnaires, checklists, indexes, and scales (Delport, 2002: 171). The researcher decided to make 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 a hundred and ten dentists (selected by means of the systematic sampling technique) from a sample frame of registered dentists practising in the Tshwane (Pretoria), Krugersdorp and Johannesburg Metropolitan areas. The sample frame (population from which will be selected) was drawn from the list of dentists, listed in the Pretoria telephone directory. The sample was then 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 practice their profession in South Africa. This list was obtained from the HPCSA. The respondents were provided with a set of questions on a form which they had to complete (Delport 2002: 172).

1.7.2.2 Qualitative data collection

Data for the qualitative case study design can be obtained by means of interviews, documents, observations or archival records (Fouché, 2002: 275). The researcher decided to use semi-structured, one-to-one interviews with an interview schedule as the qualitative data-collection method in this study. Five respondents that have had treatment for alcohol abuse or self-characterization as a problem drinker were planned to be interviewed by means of an interview schedule. According to Greeff (2002: 302), an interview schedule provides the researcher with a set of predetermined questions. The researcher purposively selected five respondents for the interviews. These interviews took place at a venue that was suitable for the respondents. Unfortunately two of the

respondents died before they could be interviewed. Because of ethical reasons and the sensitivity of the topic the researcher could not find respondents to be interviewed in the place of the deceased ones.

1.7.3 Method of data analysis

1.7.3.1 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 processing, with a view to quantification. 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.

1.7.3.2 Qualitative data analysis

De Vos (2002: 354) states that the qualitative data analysis is a process of bringing order, structure, and meaning to the mass of data collected. The researcher used the data analysis procedure as described by Cresswell (1994: 153) who says that the process of qualitative data analysis is “eclectic,” in other words, there is no right way. Metaphors and analogies are as appropriate as open-ended questions. Data analysis requires that the researcher be comfortable with developing categories and making comparisons and contrasts. The researcher must be open to possibilities and consider alternative explanations for the findings. Cresswell’s process as discussed in De Vos (2002: 340) was followed, namely collecting and recording data, managing the data, reading and

writing memos, describing, classifying and interpreting, representing and visualizing.

- Collecting and recording data – The researcher has kept records of interview notes according to themes, e.g. occupational stress themes, alcohol consumption themes. The researcher also tape-recorded the interviews and then transcribed them.

- Managing the data – The researcher organized files and notes and made use of computer programmes. The researcher evaluated the merits of the data to determine whether the data were authentic, valid, true and worthy.

- Reading and writing memos – After collection, the data were studied to enable the researcher to become familiar with the content as a whole, before categorizing it to see if similarities existed in the various categories. The researcher has also kept memos of the various uncovered themes.

- Describing, classifying and interpreting – The researcher searched for explanations and identified similarities from the different respondents' views and compared them before describing the data. The researcher also interpreted the data to give meaning to it before it was analyzed and conclusions were drawn. The researcher used descriptive statistical analyses for the purpose of summarizing, describing and analyzing major characteristics of the collected data.

- Representing, visualizing – The researcher has presented data in text and tabular form, to create a visual image.

1.8 Pilot study, pre-test of the measuring instruments and feasibility

1.8.1 Pilot study and pre-test of the measuring instruments

Before conducting a study, it is usually a good idea to do a pilot study to ensure that instruments are working properly. A pilot study is done to test the actual programme on a small sample taken from the community for whom the programme is planned. This allows the evaluator to identify any difficulty with the method or materials and to investigate the accuracy and appropriateness of the instrument that has been developed. It is also important to determine the readability of measuring instruments as people who do not understand the questions on a scale will not be able to answer them accurately (Clair Bless, Craig Higson-Smith and Ashraf Kagee, 2006: 60). Delport and Strydom (2002: 216) are of the opinion that pilot-tested questionnaires ensure that errors are corrected immediately at little cost and that necessary modifications are made before the questionnaires are presented to the full sample.

For the pilot quantitative phase of this study, questionnaires were administered to two dentists who were employed at the Oral Health Centre of the University of Limpopo, who were not part of the main study, to see if they understood the content of the questionnaire and if any changes to the questionnaire were needed. For the pilot qualitative phase of this study the researcher could not find a respondent, other than the respondents he purposively selected for the qualitative phase of the study, for the pilot testing. However, the researcher discussed the content of the semi-structured interview schedule with an expert on chemical dependency, Dr Erlank, from the Stabilis Rehabilitation Centre.

1.8.2 Feasibility

Strydom (2005: 208) states that it is also necessary to obtain an overview of the actual practical situation where the prospective investigation will be executed.

The researcher is of the opinion that this study has been cost-effective. The researcher had leave and time available, and being a dentist himself, he was sure that dentists would participate in the study if it would benefit the dental profession.

1.9 Research population, sample and sampling methods

1.9.1 Universe

The universe refers to all the potential subjects who have the attributes in which the researcher is interested (Strydom and De Vos, 2002:198). All the dentists practising in South Africa will contribute to the universe of this study.

1.9.2 Research population

Bless, Higson-Smith and Kagee (2006: 99) stipulate that good sampling implies a well defined population, an adequate chosen sample, and an estimate of how representative of the whole population the sample is. According to these authors, the “target population” is the set of elements that the research focuses upon and to which the results obtained by testing the sample should be generalized. For this study, the researcher targeted the dentists practicing in the Metropolitan areas of Tshwane (Pretoria), Krugersdorp and Johannesburg.

1.9.3 Delimitation of the study

The study was conducted in the Tshwane Metropolitan area during 2006 and 2007. Dentists registered with the HPCSA, irrespective of employment, practising their profession in the Tshwane, Krugersdorp and Johannesburg Metropolitan areas, were the focus of the research. All dentists, male or female, who are practising in these areas were utilized, whether they consume alcohol or not. The researcher also interviewed dentists (selected purposively) who have had

treatment, or are currently receiving treatment for alcohol consumption at hazardous levels irrespective of the geographical area.

1.9.4 Research sample

Although the sample is a subset 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 decided to target dentists practising in the Tshwane Metropolitan area by drawing a sample from them. The researcher is of the opinion that dentists practising in the Tshwane Metropolitan area, are representative of the whole South African dental population, because for many years the Dental Faculty of the University of Pretoria had been highly regarded, and many candidates from all the provinces of South Africa have obtained dental degrees from this faculty. The Dental Faculty of the previous Medical University of Southern Africa, currently named, the University of Limpopo, Medunsa Campus is also located in the Tshwane Metropolitan area, and candidates from all cultural groups, from all over South Africa and neighbouring countries have obtained dental qualifications from this faculty. After graduation, many dentists that have qualified from these two faculties remain in the Pretoria Metropolitan area to practise as dentists irrespective of the type of employment.

Many dentists that qualified at the remaining two Dental Schools, namely the Dental Faculty of the University of the Witwatersrand in Johannesburg and the Dental Faculty of the University of Stellenbosch are also currently practising in the Tshwane Metropolitan area.

Currently there are also dentists practicing in the Tshwane Metropolitan area that have qualified at foreign universities. Therefore the researcher believes that a sample of dentists selected from the population sample frame of dentists practising in the Pretoria Metropolitan area, is a representative of South African

dentists as a whole. However, as a result of an unsatisfactory response from this area the researcher extended the sample to dentists practising in the Krugersdorp and Johannesburg Metropolitan areas.

1.9.5 Research sampling methods and procedures

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

1.9.5.1 Quantitative sampling

A hundred and ten dentists, irrespective of type of employment, practising in the Tshwane, Krugersdorp and Johannesburg Metropolitan areas, and who are registered with the HPCSA, were selected. A 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 be 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.

1.9.5.2 Qualitative sampling

Because ethical aspects are so important in research, the qualitative sampling for this study was difficult, because alcohol treatment organizations will not reveal the names of dentists who have already received treatment for alcohol abuse or hazardous alcohol consumption. However, the researcher has attended many group-therapy sessions over a very long period, where he met dentists receiving treatment for alcohol abuse and addiction, and being a dentist himself, many of these dentists receiving alcohol treatment have confided in the researcher. The

researcher was of the opinion that some of these dentists would be willing to share their experiences during a semi-structured one-to-one interview with him, because he was sure that these dentists would be honest with him and share their experiences if these are in the interest of the dental profession. The researcher utilized the purposive or judgmental sampling technique as described by Bless, Higson-Smith and Kagee (2006: 106). They describe this technique as "a sample is chosen on the basis of what the researcher considers to be typical units to be the most common in the population under investigation". The researcher chose five respondents for the qualitative component of the research. Unfortunately two of the respondents died before they could be interviewed. Because of ethical reasons and the sensitivity of the topic, the researcher could not find other respondents to replace the deceased respondents. The criteria for the purposive sampling were South African dentists, male or female, irrespective of type of employment, race, age and geographical area, registered with the HPCSA that have had treatment for alcohol abuse.

1.10 Ethical aspects

The fact that human beings are the objects of study in the social sciences brings unique ethical problems to the fore which would never be relevant in the pure, clinical laboratory settings of the natural sciences (Strydom, 2005: 56).

The dental profession is a high profile profession, where specific ethical rules are applicable and no dentist will participate in a research project that could have negative consequences for him or her. The researcher was aware of the fact that some dentists would feel threatened by his research and that he had to respect ethical issues.

Ethical guidelines for research have been designed in order to help protect the interest of participants and sufficient literature on ethics in research is available

(Grinnell, 1993: 304; Grinnell and Williams, 1990: 304; Mouton, 2003: 245- 46; Neuman, 2003: 120 – 27; Strydom, 2005: 56-69).

1.10.1 Harm to experimental subjects and/or respondents

Regarding this issue, Strydom (2005: 58) clearly states that the researcher is ethically obliged not to expose his respondents to the faintest possibility of any physical and/or emotional harm, of which he may be aware. The researcher was aware of the fact that sensitive questions may trigger the respondent to recall bad memories concerning his alcohol consumption history. Therefore the researcher compiled the questionnaire in a manner that would minimize emotional harm that might arise from memory recall because this could be a renewed personal trauma or embarrassment to the respondent. The researcher disclosed possible emotional discomfort that might have emanated from participation. Had a participant suffered from emotional discomfort, as a result of his participation, the researcher ensured that the respondent was appropriately referred to Dr Erlank, employed at the Stabilis Rehabilitation Centre in Pretoria for counselling.

1.10.2 Informed consent

Strydom (2005: 59) explains the purpose of informed consent as “Emphasis must be placed on accurate complete information, so that subjects will fully comprehend the investigation and consequently be able to make a voluntary, thoroughly reasoned decision about their possible participation”. Nobody should ever be coerced into participating in a research project, because participating must always be voluntary (Neuman, 2003: 124). The researcher asked each participant to sign an informed consent form, which was an indication that they indeed understood the content of the research and that they had the right to participate or to decline to participate if they chose to do so. For the quantitative phase, an informed consent form was hand delivered to the respondents. The content was personally discussed with the respondents and they were thoroughly

informed about the potential impact of the investigation. The same was done for the qualitative phase of the study before the interview started. Therefore the respondents had complete and adequate information on the goal of the investigation and the procedures that would be followed (Bless, Higson-Smith and Kagee, 2006: 141 – 46).

1.10.3 Deception of subjects and/or respondents

The researcher must not hide the true nature of the study from the participants (Bless, Higson-Smith and Kagee, 2006: 141 – 46). Strydom (2005: 61) has the following view concerning deception. "It is our firm opinion that no form of deception should ever be inflicted on respondents. If this happens inadvertently, it must be rectified immediately after or during the debriefing interview". The researcher was aware of the consequences of deliberately misrepresenting facts such as withholding information, or offering incorrect information in order to ensure participation of respondents, when they would otherwise possibly have refused participation and would avoid any form of deception.

1.10.4 Confidentiality (Violation of privacy)

According to Strydom (2005: 61), privacy implies the element of personal privacy, while confidentiality indicates the handling of information in a confidential manner. Information given anonymously ensures the privacy of subjects. Questionnaires were completed anonymously by respondents and were personally distributed by the researcher and filed confidentially (Grinnell, 1993: 82-87; Mouton, 2003: 245-243; Neuman, 2003: 127; Strydom, 2000: 68). The researcher adhered to promises and agreements between himself and the participants**.** For the quantitative and qualitative phases, the researcher undertook not to engage in deception or breaching of confidentiality (Bless, Higson-Smith and Kagee, 2006: 141 – 46). In the research report, all data are used anonymously.

1.10.5 Action and competence of researcher

Researchers are ethically obliged to ensure that they are competent and adequately skilled to undertake the proposed investigation (Strydom, 2005: 63). The researcher ensured that the study has been well designed and executed with care (Bless, Higson-Smith and Kagee, 2006: 141 – 46). The researcher is knowledgeable regarding the subject of research. He has successfully completed a research project and dissertation concerning oral lesions in patients with HIV/AIDS, for his Master's degree in dentistry.

1.10.6 Cooperation with contributors

When researchers have to rely financially on a sponsor, both parties have to clarify ethical issues beforehand, and when colleagues are involved, formally and informally, a clear contract between parties is preferable (Strydom, 2005: 65).
The researcher did not involve any sponsors or any colleagues, other than the respondents for this study and is bound by the standards of the University of Pretoria's Ethical Committee.

1.10.7 Release of publications and findings

The findings of the study should be introduced to the reading public in written form, otherwise even a highly scientific investigation will mean very little (Strydom, 2005: 65). In the research report, the researcher has formulated the study accurately and objectively, including the shortcomings. The researcher will also submit two articles, written in conjunction with his promoter, to an accredited journal for publication.

1.10.8 Debriefing of subjects or respondents

According to Strydom (2005: 67), this process involves debriefing sessions after the study, where the researcher can minimize possible harm that was done to respondents. It also involves rectifying misconceptions that may have arisen in the minds of the respondents, and if therapy was part of the research, it has to be continued. The researcher will, if necessary refer the respondents for debriefing sessions, after the study, with the help of a qualified social worker (Dr Erlank) at Stabilis Rehabilitation Centre. It has been arranged with Dr Erlank that she will assist with the debriefing sessions of respondents should it be necessary.

1.11 Definition of key concepts

1.11.1 Dentist and Dentistry

The Concise Oxford Dictionary (1999: 383) defines *dentist* as follows: "A person who is qualified to treat the diseases and conditions that affect the teeth and gums". The researcher, being a dentist himself is of the opinion that this definition does not actually describe the complexity of the profession, and agrees more with the following definition: "A dentist is a person who has received a degree from an accredited school of dentistry and is licensed to practice dentistry by a state board of dental examiners. Also called odontologist. Dentistry is: (1) That department of the healing arts which is concerned with the teeth, oral cavity, and associated structures, including the diagnosis and treatment of their diseases and the restoration of defective and missing tissue. (2) The work done by dentists, such as the creation of restorations, crowns, and bridges, and surgical procedures performed in and about the oral cavity (Dorland's Illustrated Medical Dictionary, 2000: 473).

The researcher defines a *dentist* and *dentistry* as follows: A dentist is a highly skilled professional who, after qualification, has been licensed to practise dentistry. Dentistry is that part of the health professions that is concerned with the treatment of the soft and hard tissues of the oral cavity and surrounding

structures. For this purpose, the dentist has to have a sound basic knowledge of the body as a whole (anatomy, histology, physiology, biochemistry, pathology (general pathology, chemical pathology and oral pathology), pharmacology, microbiology, surgery, internal medicine and anesthesiology. General dentistry includes prosthodontics (fixed and removable prosthesis), orthodontics (correcting malocclusion), restorative dentistry (dental restorations), paedodontics (restoring primary teeth), endodontics (pulp and root canal treatment), maxillo facial and oral surgery, radiology (x-rays), diagnostics (diagnoses), periodontics (treatment of the supporting tissue of the teeth) oral medicine (non surgical treatment of oral disease), community based dentistry, and oral pathology (diseases of the oral cavity and surrounds).

1.11.2 Alcohol consumption

The Concise Oxford Dictionary (1999: 306) defines the word *consumption* as “the action or process of consuming, an amount consumed”. Dorland’s Illustrated Medical Dictionary (2000: 397) defines *consumption* as “the act of consuming, or the process of being consumed”. The researcher is of the opinion that some dentists consume alcohol, to relieve the stress and strain due to their profession.
For the purpose of this study, alcohol consumption is defined as the quantity and frequency use or abuse of alcohol for various reasons such as: a way of socializing, relaxing, calming effect, relief of depression, relief of frustration, relief of exhaustion, relief of emotional pain and stress, relief of loneliness, relief of anxiety, giving self-confidence, relief of work stress, and relief of physical pain and problems.

1.11.3 Alcoholism

Alcoholism is the personality and behavioural syndrome characteristic of a person who abuses alcohol, or the actual state or condition of one who habitually consumes excessive amounts of alcohol (Dictionary of Psychology – Penguin reference, 2001: 21). According to Dorland's Illustrated Medical Dictionary (2000: 46), *alcoholism* is "a disorder characterized by a pathological pattern of alcohol use that causes a serious impairment in social and occupational functioning. In DSM-IV it is covered by alcohol abuse and alcohol dependence". The researcher has experienced that this phenomenon is prevalent among some dentists.

For the purpose of this study, the researcher defines *alcoholism* as a form of chemical dependency where a person can no longer function without the use of alcohol and, because of tolerance, the person has to eventually abuse alcohol to get the same effect. Because of the deterioration effect of alcohol (physically, mentally and psychologically) the person eventually reaches the state where he can no longer function with or without alcohol.

1.11.4 Addiction

Dorland's Illustrated Medical Dictionary (2000: 26) defines *addiction* as "the state of being given up to some habit or compulsion". According to the Dictionary of Psychology – Penguin reference (2001: 11), *addiction* is any psychological or physiological overdependence of an organism on a drug. Originally the term was only used for physiological dependencies where a drug has altered the biochemistry of an individual such that continued doses (often of increasing size because of tolerance) were required as in the case with opiates and alcohol. However, the line between purely physiological addiction and psychological addiction is far from clear and over the years the semantic realm of the term expanded. Even in the technical literature one can find gems like "the patient was addicted to chocolate cake". The confusion attending such loose usage, plus the definitional problems that emerged with the attempts of different governmental bodies to circumscribe the use of various illicit drugs, led the World Health

Organization to recommend that the term dependency be used with proper qualifiers for cases in which drugs are involved. For the purpose of this study the researcher defines *alcohol addiction* as the physical and psychological need of people to consume alcohol in order for them to function.

1.11.5 Occupational stress

According to the Dictionary of Psychology - Penguin reference (2001: 480, 716), an *occupation* is "specifically, any activity or set of activities carried out for purposes of earning a living" and the term *stress* in this sense is an effect; it is the result of other occupational pressures. For the purpose of this study *occupational stress* is therefore defined as the physical or mental strain that an individual endures as a result of the work he/she does for a livelihood.

1.12 Limitations of the study

With regard to the current study, six limitations have been identified:

- There was insufficient literature available on alcohol consumption among dentists and even less among South African dentists, linked to the stress and strain of the dental profession. The literature search (internationally) revealed that prevalence studies on substance abuse seldom involved dentists.
- As ethical aspects are so important in research, the qualitative sampling for this study was difficult, because alcohol treatment organizations were reluctant to reveal the names of dentists who had already received treatment for alcohol abuse or hazardous alcohol consumption, which was the planned method of acquiring possible respondents. However, the researcher personally contacted five dentists who met the criteria for the qualitative sampling (had already received treatment for alcohol abuse, or were self-characterized as heavy alcohol users). Unfortunately two of

these dentists who characterized themselves as heavy alcohol users died before they could be interviewed, leaving the researcher with only three respondents that had treatment for alcohol abuse. No other respondents could be found to replace the deceased ones.

- Because of the sensitivity of the topic that was investigated, there is a possibility that the respondents were reluctant to reveal personal information regarding their alcohol use linked to the stress of their profession, which could have affected the validity and reliability. This was possible despite the fact that the respondents were ensured that their confidentiality would be respected.
- Due to the sensitivity of the topic the application for ethical clearance took much longer than expected.
- Although the response rate in the quantitative phase was 70%, the findings of this study cannot be generalized with certainty to the whole population of South African dentists, because the sample was chosen from dentists practising in the Gauteng province of South Africa. The majority of the respondents grew up and attended school in the Gauteng province; nevertheless all the other provinces were represented to a lesser degree.
- Due to an insufficient response from the sample of dentists that was chosen from the Tshwane metropolitan area of Gauteng, as initially planned for the quantitative study, the researcher had to include dentists practising in the Krugersdorp and Johannesburg metropolitan areas of Gauteng in the sample frame.

1.13 Content of the thesis

Excluding this chapter, the thesis consists of the following:

- Chapter 2: Alcohol use, abuse, and alcoholism - In this chapter the many facets of alcohol use, abuse and dependency in general, not only as it relates to a dentist, are discussed.
- Chapter 3: Factors in the dental profession that cause occupational stress, anxiety and burnout - The researcher addressed literature on stress and burnout, factors in the dental profession that cause occupational stress, economic stressors, practice management and stress, job satisfaction and stress, dental procedures and stress, overall stress, and age related to stress.
- Chapter 4: The phenomenon of alcohol consumption and alcohol related problems among dentists - In this chapter the researcher addressed the literature available on alcohol related problems among dentists and found that not much literature is available on this topic with respect to South African dentists.
- Chapter 5: The empirical findings (quantitative phase) of this study - Data were obtained with regard to biographical information of the respondents, background information of the respondents, stress factors and coping with stress among dentists, alcohol use/abuse and dysfunction as a result of alcohol use/abuse among dentists, and a dentist's perspective of alcohol use, linked to the stress and strain of the dental profession.
- Chapter 6: The empirical findings (qualitative phase) of this study - Semi-structured interviews with an interview schedule were conducted with dentists that have already had treatment for alcohol abuse. The researcher derived categories and themes from the findings of the qualitative phase to reinforce the findings of the quantitative phase.
- Chapter 7: Summary, conclusions and recommendations - The purpose of this chapter was to summarize the content of the preceding thesis and to provide conclusions and recommendations derived from the findings of the

research for this thesis. The overall goal of this study as well as each research question with its objective was addressed.

CHAPTER 2

ALCOHOL USE, ABUSE, AND ALCOHOLISM

2.1 Introduction

In this chapter the many facets of alcohol use, abuse and dependency in general, and not only as it relates to a dentist, will be discussed. The author explores models, theories and classifications of alcoholism and addiction, and explains etiological factors relating to alcoholism. The author addresses the behavioural, psychological, and physical effects of alcohol use or abuse, as well as alcohol related disabilities linked to nutritional and pharmacological aspects of alcohol use.

2.2 Definition of key terms

2.2.1 Alcoholism (alcohol dependency)

Alcoholism is the actual state or condition of one who habitually consumes excessive amounts of alcohol. It is a personality and behavioural syndrome characteristic of a person who abuses alcohol (Reber and Reber, 2001: 21). Ringold *et al.* (2006: 2100) define *alcoholism* (alcohol dependency) as follows: “Alcoholism is a more severe pattern of drinking that includes the problems of alcohol abuse plus persistent drinking in spite of obvious physical, mental, and social problems caused by alcohol”. For the purpose of this study the researcher defines *alcoholism* as a form of chemical dependency where a person can no longer function without the use of alcohol and, because of tolerance, the person has to eventually use alcohol in excessive amounts to get the same effect. Alcohol, when used in excessive amounts, has a deterioration effect (physically, mentally and psychologically) and the person eventually reaches the state where he/she can no longer function with or without alcohol.

2.2.2 Alcohol abuse

According to Reber and Reber (2001: 21) *alcohol abuse* is the general label for any pathological syndrome associated with excessive alcohol use. The researcher is of the opinion that some individuals consume alcohol for the positive effect that it has for them such as a calming effect, a way of relaxing, relief of anxiety and as a coping mechanism. However, after prolonged use of alcohol, a person develops tolerance and more alcohol has to be consumed for the same effect. Eventually such a person has to abuse alcohol in order to feel the required effect, and by definition such a person will develop a pathological syndrome associated with the excessive use of alcohol.

2.2.3 Addiction

Dorland's Illustrated Medical Dictionary (2000: 26) defines *addiction* as "the state of being given up to some habit or compulsion". According to the Dictionary of Psychology (2001: 11) *addiction* is "any psychological or physiological overdependence of an organism on a drug". This dictionary makes it clear that physiological dependency occurs when a drug has altered the biochemistry of a person in such a way that continued doses of increased size (because of tolerance) are required as seen in alcoholism. The line between physiological addiction and psychological addiction is not clear and therefore, the World Health Organization (WHO) recommends that the term *dependency* be used with proper qualifiers for cases in which drugs are involved (Dictionary of Psychology, 2001: 11). For the purpose of this study the researcher defines *alcohol addiction* as the physical and psychological need of people to consume alcohol in order for them to function.

2.2.4 Medical, psychiatric and psychological terms

Table 1 explains the medical, psychiatric and psychological terms, used in this report

Table 1: Medical, psychiatric and psychological terms

Medical, psychiatric and psychological terms	*Explanation*	*Reference*
Agitation	Shaking, mental distress causing restlessness.	Weller (2007: 13)
Alcohol hallucinosis	A syndrome of vivid auditory hallucinations following the sudden cessation of alcohol intake after an extended history of alcohol abuse.	Reber & Reber (2001: 21)
Amnesia and retrograde amnesia	Amnesia is the partial or complete loss of memory. Retrograde amnesia is the loss of memory for events prior to an injury. It often applies to the time immediately preceding an accident.	Weller (2007: 19)
Apathy	Indifference, unresponsiveness, less interest or reactivity to a situation than would normally be expected.	Reber & Reber (2001: 44)
Ataxia	Partial or complete loss of coordination of voluntary muscle movements.	Reber & Reber (2001: 60)
Barbiturates	Large group of sedatives and hypnotic drugs derived from barbituric acid.	Weller (2007: 41)

Table 1: Medical, psychiatric and psychological terms continued

Benzodiazepines	A major group of anti-anxiety drugs with tranquillizing effects e.g. diazepam.	Reber & Reber (2001: 87)
Biopsychosocial model	A model that maintains that drug dependencies are the result not just of pharmacological effects but a complex of interacting elements.	Reber & Reber (2001: 92)
Biotransformation	Any alteration in a substance within the body.	Reber & Reber (2001: 92)
Calories	The term *calorie* is used to denote physiological values to various food substances, estimated according to the amount of heat they produce while being oxidized in the body.	Weller (2007: 64)
Carbohydrates	A compound of carbon, hydrogen and oxygen. In food they are an immediate source of energy for the body. In the body they are absorbed immediately or they are stored in the form of glycogen.	Weller (2007: 67)

Table 1: Medical, psychiatric and psychological terms continued

Cerebral dementia	Dementia is a global and progressive deterioration of the mental faculties which is irreversible and affects memory, intellect, judgement, personality and emotions. Cerebral – Relating to the cerebrum of the brain.	Weller (2007: 109, 74)
Chromosomes	A chromosome is a microscopic body in the nucleus of a cell which is conspicuous during cell reproduction (mitosis). Chromosomes carry genes, the basic hereditary units.	Weller (2007: 81)
Cirrhosis	Cirrhosis is a degenerative change that can occur in any organ, but especially in the liver. This could be due to micro-organisms or toxic substances.	Weller (2007: 82)
Confabulation	The production of fictitious memories and the relating of experiences which have no relation to truth, to fill in the gaps due to loss of memory. A symptom of Korsakoff's syndrome.	Weller (2007: 91)
Convulsion	An extensive seizure with involuntary muscular contraction and relaxation.	Reber & Reber (2001: 156)

Table 1: Medical, psychiatric and psychological terms continued

Cross tolerance	Drug tolerance for one pharmacological compound produced by chronic doses of another from the same family of drugs.	Reber & Reber (2001: 754)
Cushing's syndrome	Over secretion of the adrenal cortex due to an adenoma of the pituitary gland.	Weller (2007: 101)
Deficiency syndrome	A condition caused by dietary or metabolic deficiency, including all diseases due to an insufficient supply of essential nutrients.	Weller (2007: 108)
Depression	A mood state characterized by a sense of inadequacy, a feeling of despondency, a decrease in activity, pessimism, sadness and related symptoms.	Reber & Reber (2001: 189)
Dysphoria	Inappropriate affect, usually in association with anxiety, restlessness or depression.	Reber & Reber (2001: 223)
Encephalopathy	General term for any disease or dysfunction of the brain.	Reber & Reber (2001: 241)
Enzymes	An enzyme is an organic catalyst that produces chemical changes in other substances without being changed themselves.	Reber & Reber (2001: 244)

Table 1: Medical, psychiatric and psychological terms continued

Euphoria	An exaggerated feeling of wellbeing, often not justified by circumstances.	Weller (2007: 140)
Fibrosis	Fibrous tissue formation, such as occurs in scar tissue formation or as the result of inflammation.	Weller (2007: 150)
Folic acid (folate)	One of the vitamins of the B complex and is involved in DNA and amino acid synthesis.	Weller (2007: 154)
Gastritis	Inflammation of the lining of the stomach.	Weller (2007: 162)
Genes	Genes are biological units of heredity on a particular chromosome.	Weller (2007: 163)
Gout	A hereditary form of arthritis with excess of uric acid in the blood.	Weller (2007: 169)
Hepatitis	Inflammation of the liver. One of the reasons for such an inflammation could be toxic liver injury.	Weller (2007: 183)
Hepatotoxins	Applied to drugs and substances that cause destruction of liver cells.	Weller (2007: 184)
Hyperlipaemia	An excess of fat or lipids in the blood.	Weller (2007: 193)
Hypoglycaemia	Blood sugar levels are lower than normal.	Weller (2007: 195)

Table 1: Medical, psychiatric and psychological terms continued

Keto acidosis	Ketones are organic acids that produce energy when broken down. Ketones are also called keto acids. Thus keto acidosis refers to increased keto acids.	Reber & Reber (2001: 379)
Lactic acidosis	Lactic acid is formed as a result of glucose metabolism. Lactic acid that accumulates in muscles cause the muscle to cramp.	Weller (2007: 226)
Macrocytosis	Abnormally large red blood cells.	Weller (2007: 240)
Malabsorption	Inability of the small intestine to absorb certain substances.	Weller (2007: 241)
Mental disorders	More neutral term than either mental disease or mental illness.	Reber & Reber (2001: 428)
Necrosis	Death of a portion of tissue.	Weller (2007: 265)
Neuropathy	A disease process of nerve degeneration and loss of function, e.g. alcoholic neuropathy due to thiamine deficiency in chronic alcoholism.	Weller (2007: 269)
Neurosis	Neurosis is a personality or mental disturbance not due to any known neurological or organic dysfunction.	Reber & Reber (2001: 465)

Table 1: Medical, psychiatric and psychological terms continued

Neurotransmitter	A neurotransmitter functions as the vehicle of communication across the synaptic gap between the terminal buttons of one neuron and the membrane of the receiving cell on the other side. Dopamine is one of these neurotransmitter substances.	Reber & Reber (2001: 466)
Osteoporosis	Abnormal rarefaction of bone which may be idiopathic or secondary to other conditions (thinning of the skeleton and decreased precipitation of calcium in bone).	Weller (2007: 284)
Pancreatitis	Acute pancreatitis is a severe condition usually associated with alcohol misuse or biliary disease. Sudden pain in the upper abdomen and back.	Weller (2007: 290)
Personality	Personality is 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.	Weller (2007: 300)

Table 1: Medical, psychiatric and psychological terms continued

Psychosis	A psychotic disorder	Reber & Reber (2001: 585)
Schizophrenia	Schizophrenia is a general label for a number of psychotic disorders with various cognitive, emotional and behavioural manifestations.	Reber & Reber (2001: 650)
Status epilepticus	Condition in which there is rapid succession of epileptic fits.	Weller (2007: 367)
Thrombocytopenia	A reduction in the number of platelets in the blood affecting blood clotting.	Weller (2007: 385)
Tolerance	A condition of diminished responsiveness to a particular drug resulting from repeated exposure to it.	Reber & Reber (2001: 754)
Toxicology	The science dealing with poisons.	Weller (2007: 388)
Tremor	An involuntary muscular quivering which may be due to fatigue, emotion or disease.	Weller (2007: 392)

2.3 Alcoholism

The researcher agrees with Kumar, Cotran and Robbins (1997: 234) that alcohol is partly consumed for its mood-altering properties and when used in moderation it is socially acceptable and non-injurious. However, when excessive amounts are used alcohol can cause marked physical and psychological damage. They claimed that in 1997, in the United States, there were more than 10 million chronic alcoholics and an additional 7 million who drank enough amounts of alcohol to suffer adverse effects. Similarly, the researcher is also of the opinion that there is a high prevalence of alcohol abuse in South Africa. Rademeyer (2006) reported that, according to the South African Council for Alcoholism and Drug addiction (SANCA), between June 2005 and March 2006, altogether 8 718 persons received treatment for alcoholism and drug addiction at SANCA in-patient and out-patient clinics. Of these patients, 4 315 received treatment for alcohol addiction.

From the literature (Sher, 2006: 700-706) it is clear that alcohol, primarily in the form of ethyl alcohol (ethanol), has occupied an important place in the history of human kind. Sher claimed that in most Western societies at least 90% of people consume alcohol at some time during their lives, 30% or more of drinkers develop alcohol related problems and alcohol dependency (alcoholism) is observed at some time during their lives, in 10% of men and 3-5% of women.

The researcher is of the opinion that alcohol abuse is responsible for work absenteeism, underperformance and even premature death. This belief is supported by the findings of Schuckit (2001: 2561) who claimed that alcohol is responsible for almost 5% of missed work time, with a 25% decrease in work performance among heavy drinkers. Schuckit is also of the opinion that men and women who fulfill criteria for alcohol use disorders decrease their lifespan by approximately 15 years, with abuse and dependence responsible for almost 25% of premature deaths in men and 15% in women. These figures represent early

death, as a result of alcohol, even among people with higher levels of education and socio-economic functioning.

The researcher believes that people who use alcohol in excessive amounts experience certain problems such as legal problems and getting into trouble at their workplaces. According to Ringold *et al.* (2006: 2100) alcohol abuse is a pattern of drinking that is accompanied by one or more of the following problems: Failure to fulfill major work such as occupation, school or home responsibilities because of drinking, drinking in situations that are physically dangerous, alcohol-related legal problems, and having social or relationship problems that are caused by the effects of alcohol. Ringold *et al.* (2006: 2100) define alcoholism (alcohol dependency) as follows: "Alcoholism is a more severe pattern of drinking that includes the problems of alcohol abuse plus persistent drinking in spite of obvious physical, mental, and social problems caused by alcohol. Also typical are loss of control over drinking, withdrawal symptoms such as nausea, sweating, shakiness etc, and tolerance (needing increased amounts of alcohol in order to feel drunk)".

In her thesis, The Substance dependant Doctor – A social work perspective, Erlank (2002: 34-36) mentions the viewpoints of Brooks and Rice (1997: 11). Brooks and Rice state that little progress has been made in the development of a model and theory that explains the etiology of substance dependency and quote that "everyone is vulnerable to either the direct or indirect effects of addiction". She makes it clear that, in spite of all the theoretical explanations for substance dependency, it has a destructive and painful effect on the substance dependant individual and his or her family. It appears that there is still a debate whether age of an individual influences the individual's ability to become addicted to alcohol. O'Neill and Sher (2006: 228-244) claimed that community and high-risk sample studies suggest that alcohol dependency is relatively stable and chronic, but epidemiological studies demonstrate a strong age-graded decline whereby alcohol dependency tends to peak in early adulthood and declines thereafter.

However, Erlank (2002: 36) states that substance dependency is a progressive condition if intervention is not implemented. It is difficult to clearly distinguish between *alcohol abuse* and *alcohol dependency.* Doweiko (1996: 50-51) mentions that research authors are of the opinion that it is not clear whether the distinction between alcohol abuse and alcohol dependency carries any important prognostic or treatment implications. When alcohol use has reached the point where the drinker is experiencing various physical, legal, social, financial, and legal problems, the distinction between abuse and dependency becomes virtually meaningless. Meyer (1994: 165; cited in Doweiko, 1996: 50-51) states that what the research does suggest, is that it usually takes about ten years of heavy drinking before the typical person becomes dependent on alcohol. However, once a person does become dependent on alcohol, even if that person stops drinking for a period of time, he or she will again become dependent in a matter of days to weeks. Thus, once an individual becomes dependent on alcohol, it is unlikely that he or she can return to non-abusive drinking.

2.4 Models, theories and classifications to explain alcohol drinking behaviour and dependency (addiction)

There are many models, theories, classifications and explanations for substance dependency and behaviours. Here, the author addresses some of the more common models, theories and classifications of substance dependency and explains addictive behaviours.

2.4.1 The moralistic theory of substance dependency

In the 19th century, substance dependency was seen as a sin and something immoral. It was claimed that an individual who suffered from substance dependency, acted immorally with no self-control (Stevens-Smith and Smith, 1998:26). It was only in the middle of the 20th century that the WHO formally defined substance dependency. However, in modern society, some people still

have a negative perception (Erlank, 2002: 35). The moral model blames the drinker for the problem, which is regarded as a sin due to weakness. The drinker is responsible for the consequences of his or her actions, and thus variants of this model are the legal and spiritual models. The former relates to the ability to control behaviour, the latter to the need for some powerful alliance to aid the alcoholic to overcome temptation (Murray, Hill and McGuffin, 1997: 257). The researcher is also of the opinion that in modern society there are still individuals with the perception that people suffering from alcohol dependency, whether it is psychological or physiological in nature, are bad people who deliberately do not want to quit.

2.4.2 The medical model (theory) of substance dependency

The disease model implied that the alcoholic could no longer be regarded as a immoral person with no self-control. This had important political and social consequences in that alcoholics were no longer punished and denied access to help (Murray, Hill and McGuffin, 1997: 257). Jellinek, according to Stevens-Smith and Smith (1998:27), developed the medical model for substance dependency. He describes substance dependency as a chronic and progressive medical condition, characterized by a genetically predisposed physiological deficiency. Dodgen and Shea (2000: 44) support Jellinek's conceptualization that alcoholism and other forms of substance abuse are chronic, progressively and potentially fatal diseases (Dodgen and Shea, 2000: 44; cited in Erlank 2002: 36). The researcher strongly supports this view because he has on many occasions been in contact with individuals, for whom it was impossible to quit their drinking habits. Many of these individuals came from families where either one or both of the individual's parents abused alcohol, and some of these individuals were medically, mentally and psychologically so broken down that there was very little hope of recovery. Jellinek described five types of alcoholism, which he labeled with letters of the Greek alphabet (McMurran, 1994: 14). These are:

- Alpha alcoholism is drinking to relieve physical or mental pain, which creates social or psychological problems, but where no withdrawal symptoms are evident.
- Beta alcoholism is regular heavy drinking, often in accordance with cultural norms, causing physical damage.
- Gamma alcoholism is where the alcohol has caused biological changes, such as altered metabolism, leading to withdrawal symptoms, craving and loss of control over drinking – once the gamma alcoholic starts drinking, he or she cannot stop.
- Delta alcoholism is like gamma alcoholism in respect of biological changes, but here the withdrawal symptoms are such that alcohol is always necessary – the delta alcoholic drinks constantly.
- Epsilon alcoholism, which is binge drinking, with drinking bouts separated by periods of abstinence.

Only the gamma and delta alcoholism were considered to be disease forms because they entailed biological changes (adaptation of cell metabolism, increased tissue tolerance and withdrawal symptoms) that resulted in craving and inability to abstain from alcohol. The other forms of alcoholism, although problematic, were not seen as disease forms.

In Jellinek's work, as cited in Stevens-Smith and Smith (1998:27), we see the distinction drawn between alcoholics, who are supposedly in the grips of a disease process, and alcohol abusers, who may be causing harm to themselves or others, but are not afflicted with the disease, a dichotomy that is central to later psychiatric classification systems.

The researcher strongly believes that alcoholism is a disease because he has observed alcohol withdrawal symptoms in individuals suffering from alcoholism. In many of these individuals the alcohol withdrawal symptoms and craving were

so severe that it was impossible to quit drinking. For them, another drink seemed to be the only solution.

2.4.3 The genetic theory of substance dependency

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 being 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 rate to which an individual develops tolerance to alcohol is genetically predisposed.

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. The researcher has been in conversation with persons suffering from alcohol dependency, and the majority of these people confirmed that alcohol or other substance abuse runs in their family. Either a brother, or a sister, or one of the parents, or both, were addicted to alcohol or another chemical substance.

To be able to understand the genetic predisposing factors of alcoholism, one also has to understand the metabolism of alcohol. Once in the blood, alcohol passes rapidly into all body tissue, including those of the brain. As alcohol may defuse into muscle and fat tissue, an obese or muscular person would normally have a

slightly lower blood alcohol level than would a leaner person after a given dose of alcohol. The researcher has, while observing people at drinking occasions, noted that the more obese people tended to get less intoxicated, by the same amount of alcohol intake, than slimmer people. About 95% of the alcohol that reaches the blood is metabolized by the liver before it is excreted. The other 5% of alcohol in the blood stream is excreted unchanged through the lungs, skin and urine (Ashton, 1992; cited in Doweiko, 1996: 41). The researcher has observed that, no matter how hard alcohol abusers attempt to hide the fact that they have used alcohol, other people can still smell the alcohol on their person. This is due to the fact that a percentage of alcohol is excreted unchanged by the lungs and skin.

The body bio-transforms alcohol in two steps. First, the liver produces the enzyme alcohol dehydrogenase (ADH), which breaks the alcohol down into acetaldehyde. The second enzyme required to metabolize alcohol is aldehyde dehydrogenase, an enzyme produced in many different parts of the body. This enzyme breaks down the acetaldehyde into acetic acid. Ultimately, alcohol is bio-transformed into carbohydrates. The latter are the source of the “empty calories” obtained by ingesting alcohol (Goodwin, 1989; cited in Doweiko, 1996: 41). Research by Wall (2005) has shown that the functioning of the enzymes alcohol dehydrogenase and aldehyde dehydrogenase are regulated by genes. Two alcohol dehydrogenase genes on chromosome 4 and one aldehyde dehydrogenase gene on chromosome 12 are associated with lower rates of alcohol dependency. The researcher is of the opinion that this is the reason why some people can consume more alcohol over a longer period of time than other people, without becoming dependant on alcohol.

Tabakoff *et al*. (1988: 134-9) indicated that the dopamine neurotransmitter system was a focus of interest in the development of alcoholism. Blum *et al.* (1990: 2055-60) claimed that variation in the dopamine D2 neurotransmitter receptor gene (DRD2) can be attributed to alcoholism. Cook and Curling (1994:

400-3) came to the conclusion that the dopamine receptor gene, is the most important single gene determinant of susceptibility to substance abuse.

However, we must always bear in mind that alcohol induced adverse effects does not result from a genetic background alone. Gemma, Vichi and Testai (2006: 8-16) states 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 have contributed towards their particular drinking behaviour.

2.4.4 Psychiatric classification of substance dependency

According to McMurran (1994: 19) there are two main systems of classification of psychiatric disorders namely:

- The American Psychiatric Association's (APA) Diagnostic and Statistical Manual of the Mental Disorders (DSM).
- The World Health Organization's (WHO) International Classification of Diseases (ICD).

Nathan (1991: 356-61) as cited in McMurran (1994: 20) stated that alcoholism and drug dependency appeared in DSM-1 (APA,1952) and DSM-II (APA, 1968) as subsets of the category "Sociopathic personality disturbance", along with anti-social behaviour and the sexual deviations. This mixed category clearly shows how behaviours that may be a threat to good order in society have been pathologized. DSM-III (APA, 1980) moved away from the implicit moralizing, by allocating a separate category to the substance use disorders, within which two

types of disorder figures – abuse and dependence. Abuse was defined by impaired social or occupational functioning, whereas dependence was defined by the process of tolerance and withdrawal (McMurran, 1994: 20). The DSM-IV (APA, 1987, 1994) uses the terms dependence and abuse (Murray, Hill and McGuffin, 1997: 248). Gilles (1986: 168) states that a person is psychologically dependent on a substance if he craves for the euphoric effect (a "high") of the substance, and a person is physically dependent if he develops physical symptoms on stopping the substance.

Alcoholism and drug dependence appeared in the ICD-8 (WHO, 1965), within the category "Neuroses, personality disorders, and other non-psychotic mental disorders". In ICD-9 (WHO, 1977), within the same overall category, three separate disorders were listed, the alcohol dependence syndrome, drug dependence and non-dependent abuse of drugs (McMurran, 1994: 21). The ICD-10 (WHO, 1987) has adopted the terms alcohol dependence syndrome and harmful use. The evolution of the dependence syndrome concept has been useful in that it provides a basic set of criteria for diagnosis, and has thus improved communication between professionals (Murray, Hill and McGuffin, 1997: 248).

In Table 2, Murry, Hill and McGuffin (1997: 248) make a comparison between ICD-10 (WHO, 1987) and DSM-IV (APA, 1987; 1994)

Table 2: Comparison between ICD-10 (WHO, 1987) and DSM-IV (APA, 1987, 1994)

	ICD-10	DSM-IV
	Dependence	Dependence
Compulsion to use	+	-
Impaired capacity to control use	+	+
Tolerance	+	+
Neglect of pleasure, behaviours, interests	+	+
Persistent use despite evidence of harmful consequences	+	+
Great deal of time spent in activities related to obtaining, using or recovering from the substance	-	+

	ICD-10	DSM-IV
	Harmful use	Abuse
Evidence of psychological or physical harm caused by the substance	+	
Failure to fulfill major role obligations		+
Legal problems		+
Recurrent social or interpersonal problems		+
Use in physically hazardous situations		+

The researcher agrees that drug dependency should not be subsets of the category “Sociopathic personality disturbance”, along with anti-social behaviour and the sexual deviations, as it appeared in DSM-1 (APA, 1952) and DSM-II (APA, 1968). Abuse and dependence, as it appears in DSM-IV (APA, 1987,1994), is more appropriate because substance abuse is clearly linked to a lack of fulfilling major role obligation, legal problems, social and interpersonal problems, and using substances in physically hazardous situations. Furthermore, the researcher agrees that substance dependency is accompanied by factors,

such as compulsion to use, impaired capacity to control use, tolerance, neglecting interests, persistent use despite evidence of harmful consequences, and a great deal of time spent in activities related to obtaining the substance.

2.4.5 Psychological model of addiction

The disease model alone does not fit all the facts that could lead to substance dependency. 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. Somehow, this whole range of factors that influences behaviour must be taken into account in any approach to understanding addiction (McMurran, 1994: 31-33). In her book, *The Psychology of Addiction,* Mc Murran (1994: 31-40) describes major psychological theories, such as classical conditioning, operant conditioning, opponent process theory, social learning theory, problem behaviour theory, and expectancy theory to explain addiction. However, she concludes by giving the implications of psychological approaches to addiction:

- There is no single explanation of addiction.
- Addicts are not different from the rest of us.
- There is no cut-off point for addiction.
- Addiction is not irreversible.
- 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 (McMurran, 1994: 34-48).

The symptomatic model suggests that alcoholism is the result or symptom of some underlying psychological problem, personality difficulty or anxiety. This is

now regarded as relatively simplistic, although interrelations between mental disorder and alcohol problems do exist (Murray, Hill and McGuffin, 1997: 257).

From his own experience in the field of substance dependency, especially alcohol dependency, the researcher agrees that the disease model alone does not fit all the facts that could lead to substance dependency. There are other psychological factors that contribute to alcohol dependency such as culture, lifestyle, social activity, environment, personality, emotional aspects, and physical aspects.

2.4.6 Other models to explain drinking behaviour

Models, such as the disease and psychological models of addiction, provide meaningful explanations for substance dependency or any addiction. However, one must always bear in mind that there are other meaningful explanations for addictive behaviour (Murray, Hill and McGuffin, 1997: 257-261).

2.4.6.1 The learning model

The learning model of drinking behaviour supposes that normal and abnormal behaviours is subject to the same learning processes (Murray, Hill and McGuffin, 1997: 257). The researcher is of the opinion that many people learned some or other time in their lives that alcohol has some benefit for them, such as relaxing, calming or providing coping mechanisms. Because they learned that alcohol was beneficial in certain unpleasant situations, they use alcohol every time when such an unpleasant situation arises. According to Clark *et al*. (1995: 206) the learning theory has also been used to develop a causal model of substance use. Many alcoholics report that being intoxicated reduces anxiety and replaces it with a feeling of well-being. Because people are drawn toward pleasurable states, drinking behaviour, for example, is reinforced and gradually becomes a learned behaviour, a so-called habit.

2.4.6.2 The social model

This model seeks explanation in the environment of the individual, rather than internal characteristics (Murray, Hill and McGuffin, 1997: 258). The researcher is of the opinion that the social model implies that factors, such as culture, personal values and environment in which a person is placed, will predict how much such a person drinks.

2.4.6.3 The biopsychosocial model

The researcher agrees that addictive behaviour can be linked to 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 puts emphasis on the dynamic interaction of the multiple components".

2.4.6.4 Environmental risk factors

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. However, once a person is addicted to alcohol, no matter what risk there is involved, such a person will go to extreme measures to obtain alcohol.

The researcher believes that although there are many models that explain drinking behaviour, it stays individualized. Although the drinking pattern of some individuals may be the same, one may find that their circumstances differ.

2.5 The effects of alcohol

The term *alcohol* refers to a large group of organic molecules that have a hydroxyl group (-OH) attached to a saturated carbon atom. Ethyl alcohol, also called ethanol , is the common form of alcohol and is sometimes referred to as beverage alcohol because it is the alcohol that is used for drinking. The chemical formula for ethanol is: CH_3-CH_2-OH. The possible beneficial effects of alcohol have been reported, especially by the distributors of alcohol. Some epidemiological data suggest that one or two glasses of red wine each day lower the incidence of cardiovascular disease. However, these findings are highly controversial (Sadock and Sadock, 2003: 398). The researcher is of the opinion that when a person has the make-up (predisposing factors) to develop an alcohol dependency problem, especially a genetic background, such a person should rather disregard the so-called beneficial effects of alcohol. Such a person should rather focus on the possible bad effects of alcohol.

2.5.1 Behavioural effects of alcohol

According to Sadock and Sadock (2003: 399), a level of 0,05% alcohol in the blood disrupts thought, judgment, and restraint is loosened. At a concentration of 0,1% , voluntary motor actions usually become perceptibly clumsy. Legal intoxication ranges from 0,1-0,15% blood alcohol level. At 0,2%, the function of the entire motor area of the brain is measurably depressed, and the parts of the brain that control emotional behaviour are also affected. At 0,3%, the person is commonly confused and at 0,4-0,5%, the person falls into a coma. At higher levels, the primitive centers of the brain that control breathing and heart rate are affected that can result in death. Persons with long term histories of alcohol

abuse, however, can tolerate much higher concentrations of alcohol than can alcohol naïve persons. Their alcohol tolerance may cause them to falsely appear less intoxicated than they really are (Sadock and Sadock, 2003: 399).

The six stages of alcohol intoxification can be described as follows:
Alcohol is a suppressant as it suppresses the normal function of your brain, and this happens in six stages (Alcohol: The six stages of…, [Sa]).

The jovial phase – The frontal lobes control among other things your inhibitions, self-control, willpower, ability to judge and attention span. If the frontal lobe is suppressed you get jovial, your self-confidence increases, you talk more and become more generous. This already happens when your blood alcohol levels are still within the legal limit (0,05g/100ml).

The slurring phase – At a blood alcohol level of 0,10g/100ml the parietal lobes are affected and your motor skills become impaired and your speech starts slurring without you noticing it.

The can't see properly phase – At a blood alcohol level of 0,20g/100ml the occipital lobes are affected and your vision perception ability becomes limited.

The falling down phase – At a blood alcohol level of 0,15g/100ml the cerebellum becomes affected and it is difficult to maintain your balance.

The down and out phase – At a blood alcohol level of 0,25 gram/100ml the diencephalon of the brain as well as the mesencephalon (midbrain) are affected. You become tired and very unsteady, you start shaking and you vomit. You are ready to pass out. You may become comatose.

The valley of the shadow of death phase – Should you continue to take alcohol in and it reaches a blood alcohol level of 0,36 – 0,40g/100ml your brainstem and

medulla oblongata are affected and it is a life threatening situation because these centre control your breathing and blood circulation.

The researcher has had encounters with alcohol intoxicated people on numerous occasions. Most of these people appeared to lack judgement, their thoughts were not clear and their voluntary motor actions were clumsy. He has also dealt with persons that had no control over their emotional behaviour as a result of being drunk and they were commonly confused and made inappropriate remarks. The researcher also had conversations with people, knowing that they had been exceeding the normal drinking limit by far but appeared not to be intoxicated.

2.5.2 Psychological consequences

Alcoholics often present with symptoms of depression such as dysphoria, agitation, apathy, suicidal ideation, loss of libido, early morning waking, loss of appetite and weight loss. Alcohol may also increase the likelihood of a successful suicide, as alcohol use is common immediately prior to or during suicide attempts (Murray, Hill and McGuffin, 1997: 249). According to Sher (2005: 1010-12), alcohol use and abuse substantially influence suicide rates and suicide is the cause of death for a substantial percentage of individuals with alcoholism. However, many different factors, including the prevalence of various psychiatric and medical disorders, quality of psychiatric and medical care, unemployment and divorce rates, and other psychosocial and demographic factors determine suicide rates in a certain region or country.

The researcher has known people who took alcohol in excessive amounts over many years. Some of these individuals presented with symptoms of depression which were aggravated by the continuous prolonged alcohol intake. Some of these people actually told the researcher that they had attempted suicide but were unsuccessful.

2.5.2.1 Neurosis and personality disorder

Stockwell and Bolderston (1987: 971-9) claimed that anxiety and phobic symptoms may be causal factors for developing a drinking problem, as patients may attempt to control their anxiety and phobias by drinking, but the alcohol consumption may then in turn exacerbate the anxiety or phobia. The researcher attended alcohol rehabilitation facilities where patients assured him that they mainly consumed alcohol to deal with anxiety. However, a great deal of these patients also told him that the relief was only temporarily because once the alcohol effect seized, their anxiety was even greater.

2.5.2.2 Schizophrenia, alcohol hallucinosis and pathological jealousy

Bernadt and Murray (1986: 393-400) found that on average, schizophrenics drank less than other psychiatric patients and that very few cases of alcoholic hallucinosis develop into schizophrenia. Alcoholic hallucinosis is a condition in which a chronic drinker complains of auditory hallucinations of a persecutory nature. This may follow abstinence, reduction of alcohol consumption or even occurs during the course of drinking. Pathological jealousy is an unpleasant and destructive syndrome that can develop on the backdrop of heavy drinking, but also as part of depression or schizophrenia (Murray, Hill and McGuffin, 1997: 250). During conversations with alcoholics, the researcher noted that some alcoholics were extremely jealous and accused their wives of being unfaithful for meaningless reasons. Many people who abuse alcohol have also told the researcher that they hear or see things that do not exist while drinking, or when they are in a state of alcohol withdrawal.

2.5.3 Physical consequences of alcohol abuse

There are many physical complications resulting from the use of alcohol. Murray, Hill and McGuffin (1997: 250) are of the opinion that these complications relate to

the pharmacological effects of alcohol, withdrawal, toxicity and deficiency syndromes as a result of chronic alcohol abuse. Subsequently, some of the major effects will be discussed.

2.5.3.1 Effects on the Digestive system

There is a known relationship between chronic alcohol abuse and cancer of the upper digestive tract, respiratory system, mouth, pharynx, larynx, esophagus, and liver (Garro, Espina and Lieber, 1992: 81-5). Rice (1993: 10-11) mentions that alcohol is responsible for 75% of deaths due to cancer of the esophagus. The combination of alcohol and cigarette smoking increases the risk of developing cancer of the mouth and pharynx (Garro, Espina and Lieber, 1992: 81-5).

The liver is the organ that is most commonly affected by alcohol because the liver is the organ that metabolizes alcohol. Alcohol is a potent hepatotoxin when taken in large quantities and liver changes occur even after isolated bouts of heavy drinking. Early evidence of metabolic injury to liver cells is the appearance of fatty change by means of lipid accumulation within some liver cells. With more severe metabolic disruption, the liver cells undergo hydropic degeneration and become swollen. In some cases the metabolic changes are irrecoverable and some liver cells undergo necrosis. The liver cells around the centrilobular veins in the liver appear to be the most vulnerable to alcohol toxicity and in some individuals delicate fibrosis develops around the centrilobular veins (Nace, 1987: 23).

With prolonged alcohol abuse, there is progressive fibrosis because of liver cell necrosis and regeneration of liver cells which can develop into alcohol cirrhosis. Some individuals develop recurrent alcoholic hepatitis that is likely to proceed to cirrhosis. Others may develop cirrhosis insidiously with no preceding episodes of acute hepatitis. Reversible fatty change may develop in a healthy individual after a single drinking binge. The presence of fatty change in a known alcoholic is an

indicator of continued alcohol intake (Stevens, Lowe and Young, 2002: 156). The researcher is of the opinion that a person who abuses alcohol, over a long period of time, will eventually die of liver disease if they do not quit their drinking. This is, if they do not die of any other alcohol related problem before the time.

Alcohol has been implicated as a cause of a painful inflammation of the pancreas known as pancreatitis. Approximately 35% of all known cases of pancreatitis are caused by chronic alcohol use and it is estimated that alcoholism is the major cause (66-75%) of pancreatitis (Steinberg and Tenner, 1994: 1198-1210). Chronic pancreatitis is fairly common in chronic alcoholics and is often associated with cirrhosis of the liver. In chronic pancreatitis the gland becomes firmer. Sometimes it is enlarged, but more frequently it is shrunken and atrophic due to fibrosis and atrophy of the glandular elements of the pancreas. The Islets of Langerhans may also become fibrotic resulting in diabetes. Chronic pancreatitis is associated with varying degrees of malabsorption of nutrients (Cappell and Anderson, 1974: 598). The researcher knows and has spoken to people who suffer from diabetes as a direct result of prolonged excessive alcohol use.

Chronic alcohol use may also cause gastritis due to chronic irritation of the stomach lining. Inflammation of the stomach is termed gastritis and may be divided into acute and chronic forms. Acute gastritis may be associated with the use of aspirin, anti-inflammatory drugs, excessive alcohol use, and severe stress. Chronic gastritis due to chronic alcohol consumption is also known as chronic chemical gastritis or reactive gastritis. It is the chronic gastritis that is associated with the development of peptic ulceration and less commonly gastric carcinoma (Stevens, Lowe and Young, 2002: 138). However, even with the stomach lining intact, chronic alcohol ingestion contributes to a number of malabsorption syndromes, in which the individual's body is no longer able to absorb needed vitamins or minerals from food (Marsano, 1994: 284-291).

Sometimes the chronic intake of alcohol causes a painful inflammation of the tongue (glossitis), as well as stricture of the esophagus that makes it difficult for the individual to take in adequate levels of food (Marsano, 1994: 284-291). Charness, Simon and Greenberg (1989: 442-454) state that when the body metabolizes alcohol, one of the eventual by-products is a form of carbohydrate, which the body then burns in the place of normal food. This results in a form of anorexia, as the body replaces the normal calorie intake with "empty" calories obtained from alcohol. There are a number of other metabolic consequences of heavy alcohol use for both the alcoholic and the heavy social drinker such as: inadequate body control of blood glucose levels, inadequate secretion of digestive enzymes from the pancreas, and inadequate fat metabolism (Doweiko, 1996: 56).

As a dentist, the researcher has encountered numerous conditions of the oral cavity and surrounds, that are associated with alcohol abuse. He has also treated dental patients that suffer from hepatitis, pancreatitis and gastritis as a result of long term alcohol abuse and is familiar with these conditions.

2.5.3.2 Effects on the cardiovascular and respiratory systems

Marmot and Brunner (1991: 565-8) reviewed studies concerning the protective effect of low level alcohol consumption on cardiovascular disease and came to the conclusion that "the balance of harm and benefit does not weigh in favor of making recommendations to the public to increase alcohol consumption, in order to prevent coronary heart disease". Murray, Hill and McGuffin (1997: 252), state that alcohol is an established risk factor for hypertension, strokes, chronic bronchitis, and emphysema. Thirty percent of essential hypertension may be related to alcohol abuse.

Knowing the devastating effect of alcohol once a person gets addicted to it, the researcher is of the opinion that, even if there are beneficial effects of small

amounts of alcohol on the cardiovascular system, alcohol should be avoided if there is a possibility of alcohol dependency.

2.5.3.3 Haematological, musculoskeletal, endocrine and metabolic disorders

Alcohol, when used in excessive amounts, can cause a variety of haematological, musculoskeletal, endocrine and metabolic disorders. Alcohol is toxic to bone marrow and this results in a macrocytosis and thrombocytopenia. Gout, osteoporosis, avascular necrosis, and chronic myopathies are also associated with alcohol abuse. Alcohol causes a range of metabolic disorders including lactic acidosis, ketoacidosis, hypoglycaemia, hyperlipidaemia, and disturbances in electrolyte and acid base balance. Furthermore, alcohol causes a pseudo-Cushing's syndrome that is characterized by hypertension and obesity. Direct alcohol toxicity to the gonads and suppression of the hypothalamic-pituitary axis, causes impotence and diminished fertility (Murray, Hill and McGuffin, 1997: 253). The researcher, as a dentist, has encountered many of these conditions that are directly related to alcohol abuse, because a thorough medical history is taken from each patient before dental treatment is commenced.

2.5.3.4 Central nervous system.

In different concentrations, alcohol has different effects on the central nervous system. A blood alcohol concentration of 25 mg% causes euphoria, 50-100 mg% causes lack of coordination, 100-200 mg% causes unsteadiness, and 200-400 mg% causes stupor. Novice drinkers will exhibit such signs at much lower blood alcohol levels than hardened drinkers. Intoxication can lead to death resulting from coma and respiratory depression at a blood alcohol level of about 400 mg%. An alcoholic coma is a fatal condition in 55% of cases and toxicology analysis is needed in such cases (Murray, Hill and McGuffin, 1997: 250).

According to Murray, Hill and McGuffin (1997: 250), the effects of alcohol on the central nervous system can be summarized as alcohol withdrawal syndrome, nutritional deficiency syndromes, and alcohol toxicity.

- Alcohol withdrawal syndrome

The alcohol withdrawal syndrome occurs within hours or days after the cessation of alcohol drinking in the alcohol dependent person. The alcohol withdrawal syndrome is produced by the biological mechanism of neurological tolerance to ethanol. The clinical manifestations of the alcohol withdrawal syndrome are due to the hyperexcitability of the central nervous system: aggitation, excitability, tremor, convulsions, status epilepticus, delirium, and sympathetic hyperactivity (Yersin, 1999). The spectrum of alcohol withdrawal symptoms ranges from minor symptoms such as insomnia and tremulousness to severe complications, such as withdrawal seizures and delirium tremors. The pharmacologic treatment of alcohol withdrawal involves medications that are cross tolerant with alcohol, such as the benzodiazepines, administered on a fixed or symptom triggered schedule. The treatment of alcohol withdrawal should be followed by treatment for alcohol dependency (Bayard *et al*, 2004: 1443-50). The researcher has witnessed symptoms of alcohol withdrawal syndrome ranging from minor to major symptoms. Many people have also described the symptoms they experience when their alcohol intake is stopped at once to the researcher. These symptoms ranged from mild tremor to severe withdrawal seizures. The researcher has actually witnessed a seizure.

- Nutritional deficiency syndrome due to alcohol abuse

Murray, Hill and McGuffin (1997: 250), states that the initial presentation, due to a lack of nutrients, may be peripheral neuropathy and cardiovascular disorders, such as hypotension or high output cardiac failure, in combination with oral ulcerations. The oral ulceration is usually due to a thymine deficiency, and the peripheral neuropathy may be caused by the toxicity of alcohol, or as a result of a vitamin deficiency. Peripheral neuropathy may be mild or a severe incapacitating sensori-motor neuropathy. Perhaps the most serious complication of chronic

alcohol use is a form of brain damage known as Wernicke's encephalopathy, which is related to an avitaminosis of thiamine, one of the B family of vitamins. (Charness, Simon and Greenberg, 1989: 442-454). Lishman (1990: 653-44) describes the Wernicke-Korsakoff syndrome as a result of thiamine deficiency due to alcohol abuse. Korsakoff's psychosis presents a lack of insight, apathy, antegrade and retrograde amnesia with confabulation. It may or may not improve with vitamin replacement. The researcher, as a dentist, has personally diagnosed oral ulcerations in known alcoholics as a result of thymine deficiency.

- Alcohol toxicity

Murray, Hill and McGuffin (1997: 251) state that alcohol toxicity probably causes neuronal loss that will finally result in cerebral dementia. This condition is reversible with abstinence of alcohol. Alcoholic cerebral degeneration presents as gross ataxia and may respond to thiamine therapy in the early stages. The researcher believes and has seen that thiamine administration has been successful in treating alcohol toxicity.

Being in conversation with alcohol dependents on various occasions, the researcher came to the conclusion that alcohol withdrawal symptoms are present among almost every alcohol dependant that stops alcohol intake. These symptoms can be mild to severe and last for days up to weeks depending on how long and how excessively a person drank. Rehabilitation facilities makes it clear that alcohol withdrawal symptoms last for a shorter period than those of other drug addictions. For this reason, the alcohol abuse rehabilitation period is usually shorter than the drug abuse rehabilitation period.

2.6 The pharmacology and nutritional impact of alcohol (ethanol)

According to Schuckit (2001: 2561-2562), the pharmacology and nutritional impact of ethanol comprises the following:

- Ethanol is a weakly charged molecule that moves easily through cell membranes and rapidly equilibrates between blood and tissues.
- The level of alcohol in the blood is expressed as milligrammes (mg) or grammes (g) of ethanol per deciliter (e.g. 100 mg/dL or 0,10 g/dL).
- An alcohol level of 0,02 to 0,03 results from the ingestion of one to two typical drinks.
- In 340 ml of beer there is approximately 10g of ethanol, and in one litre of wine there is approximately 80g of ethanol.
- Although some behavioural stimulation is observed at low ethanol blood levels, ethanol is a central nervous system depressant, that decreases the activity of neurons.
- Ethanol has cross tolerance and shares a similar pattern of behavioural problems with other brain depressants, such as the bezodiazepines and barbiturates.
- The major site for alcohol absorption is from the proximal portion of the small intestine. Alcohol is also absorbed, in modest amounts, from the mucous membranes of the stomach and large bowel, and the least alcohol is absorbed from the mucous membranes of the mouth and esophagus.
- The rate of ethanol absorption is increased by rapid gastric emptying.
- The rate of absorption is also increased in the absence of proteins, fat and carbohydrates.
- About 2-10% of ethanol is excreted directly through the lungs, urine and sweat.
- The greater part of ethanol is metabolized to acetaldehyde, primarily in the liver.
- In the liver, alcohol is metabolized to acetaldehyde by means of the enzyme, alcohol dehydrogenase.
- The acetaldehyde is then rapidly destroyed by means of the enzyme, aldehyde dehydrogenase.
- One gram of ethanol has approximately 29.7 KJ of energy.

- One drink of ethanol contains between 293,0 and 418,6 KJ of energy, however these are "empty" of nutrients such as minerals, proteins and vitamins.
- In addition alcohol interferes with the absorption of vitamins in the small intestine and decreases their storage in the liver.
- The absorption of folate, pyridoxine (Vit B_6), thiamine (Vit B_1), niacin (Vit B_3), and vitamin A is reduced by ethanol.
- Heavy drinking can also produce low blood levels of potassium, magnesium, calcium, zinc and phosphorus as a consequence of dietary deficiency and acid base imbalance during excess alcohol ingestion and withdrawal.

Having been associated informally with numbers of people who suffered from an alcohol dependency problem over a very long period of time, the researcher agrees strongly that the literature reflects what he has observed amongst such sufferers of alcohol dependency.

2.7 Alcohol use and abuse in South Africa

According to Mkhize (2007), the country's Central Drug Authority (CDA) released statistics reflecting that the abuse of alcohol and the use of dagga (marijuana) has lead South Africa to being one of the top ten narcotics and alcohol abusers in the world. He also claimed that South Africans, who consume alcohol, each drink about 196 six-packs of beer or 62 bottles of spirits per year. This is the equivalent of 20.1 litres of pure alcohol per person per year. Mkhize (2007) also reported that Social Development Minister, Dr Zola Skweyiya, claimed that between 7,5% and 31,5% of South Africans have an alcohol problem or are at risk of having one, and that alcohol abuse costs the country about ten billion rand every year.

Some disturbing statistics provided by the Medical Research Council (MRC) indicate that South Africans consume over 6 billion litres of alcohol per year,

which makes South Africa one of the highest alcohol consuming countries in the world. The MRC claims that South Africa is estimated to have 240,000 shebeens and that more than 60% of hospital trauma cases are linked to alcohol consumption (Safety and security: How drinking…, [Sa]).

According to Huisman and Davids (2007), drug and alcohol abuse in South Africa is spiralling out of control, and surveys only reveal the tip of the iceberg. They claim that Social Development Minister, Dr Zola Skweyiya, has admitted that the country has a massive substance abuse problem. The Minister said that the latest research by the South African National Council on Alcoholism and Drug Dependency (SANCA) has revealed that about half of the people, who sought help at SANCA for substance abuse between April 2006 and March 2007, were jobless and 25% of them were still at school or tertiary institutions.

In a report prepared by the Alcohol and Drug Abuse Research Group, Medical Research Council, alcohol content, standard servings and alcohol calorie information were addressed. They recommended that serious consideration should be given to bring labelling on alcohol containers. These labels should spell out the number of standard drinks per container and the amount of alcohol in a standard serving. Such labels must also contain the South African Food Based Dietary Guidelines on sensible drinking: No more than 2 standard drinks per day for women and 3 standard drinks per day for men (Alcohol and Drug Abuse Reseach…, [Sa]).

Communities have very little knowledge concerning the term “a standard drink” or “a standard alcohol drink”. Carruthers and Binns (1992) investigated the knowledge of a sample of people to determine their knowledge of what a standard drink is. They found that the knowledge of alcohol content of beverages was very poor. The also found that most people did not know what a standard drink means, and what it represents in terms of absolute alcohol.

A standard drink usually contains between 8 and 14 grams of pure ethanol and this varies between countries. Table 3 reflects the alcohol content of a standard drink in various countries (Module 20: Standard Drinks, 2005).

Table 3: Alcohol content of a standard drink in various countries

Country	*Standard drink (grams of ethanol)*
United Kingdom	8
Netherlands	9.9
Australia, New Zealand, Poland, Spain	10
Finland	11
Denmark, France, Italy, **South Africa**	**12**
Canada	13.6
Portugal, United States	14
Japan	19.75
Austria	20

2.8 Summary

In this chapter, many facets of alcohol use, abuse and dependency in general, and not only as it relates to a dentist, were discussed. For the purpose of this study, the researcher defines alcoholism as a form of chemical dependency where a person can no longer function without the use of alcohol and because of tolerance, the person has to eventually use alcohol in excessive amounts to get the same effect. Alcohol, when used in excessive amounts, has a deterioration effect (physically, mentally and psychologically) and the person eventually reaches a state where he/she can no longer function with or without alcohol.

The researcher is of the opinion that some individuals consume alcohol for the positive effect that it has for them, such as a calming effect, a way of relaxing,

relief of anxiety and as a coping mechanism. However, after prolonged use of alcohol, a person develops tolerance and more alcohol has to be consumed for the same effect. Eventually such a person has to abuse alcohol in order to feel the required effect, and by definition such a person will develop a pathological syndrome associated with the excessive use of alcohol. For the purpose of this study the researcher defines alcohol addiction as the physical and psychological need of people to consume alcohol in order for them to function.

It is claimed that in most Western societies at least 90% of people consume alcohol at some time during their lives, 30% or more of drinkers develop alcohol related problems, and alcohol dependency (alcoholism) is observed at some time during their lives, in 10% of men and 3-5% of women. The researcher is of the opinion that alcohol abuse is responsible for work absenteeism, underperformance and even premature death.

Alcoholism is a more severe pattern of drinking that includes the problems of alcohol abuse plus persistent drinking in spite of obvious physical, mental, and social problems caused by alcohol. Also typical are loss of control over drinking, withdrawal symptoms such as nausea, sweating, shakiness, etc, and tolerance (needing increased amounts of alcohol in order to feel drunk). In spite of all the theoretical explanations for substance dependency, it has a destructive and painful effect on the substance dependant individual and his or her family.

It is difficult to clearly distinguish between alcohol abuse and alcohol dependency. However, when alcohol use has reached the point where the drinker is experiencing various physical, social, financial, and legal problems, the distinction between abuse and dependency becomes virtually meaningless. Once a person does become dependent on alcohol, even if that person stops drinking for a period of time, he or she will again become dependent in a matter of days to weeks when he drinks again.

There are many models, theories, classifications and explanations for substance dependency and behaviours, resulting from this condition. In the 19th century, substance dependency was seen as a sin and something immoral. Later on, in terms of the disease model, the alcoholic was no longer regarded as a immoral person with no self-control. 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 that the environment being viewed as the primary source.

The researcher agrees that drug dependency should not be classified as subsets of the category "Sociopathic personality disturbance", along with anti-social behaviour and the sexual deviations, as it appeared in DSM-1 (APA, 1952) and DSM-II (APA, 1968). Abuse and dependence, as it appears in DSM-IV (APA, 1987,1994), is more appropriate because substance abuse is clearly linked to a lack of fulfilling major role obligation, legal problems, social and interpersonal problems, and using substances in physically hazardous situations. Furthermore the researcher agrees that substance dependency is accompanied by factors such as compulsion to use, impaired capacity to control use, tolerance, neglecting interests, persistent use despite evidence of harmful consequences, and a great deal of time spent on activities related to obtaining the substance.

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. Somehow, this whole range of factors that influences behaviour must be taken into account in any approach to understanding addiction. Models, such as the disease and psychological models of addiction provide meaningful explanations for substance dependency or any addiction. However, one must always bear in mind that there are other meaningful explanations for addictive behaviour, such as the learning, social, biopsychosocial, and environmental risk factor models.

A level of 0,05 % alcohol in the blood disrupts thought, judgment, and restraint is loosened. At a concentration of 0,1 % , voluntary motor actions usually become perceptibly clumsy. Legal intoxication ranges from 0,1-0,15 % blood alcohol level. At 0,2 %, the function of the entire motor area of the brain is measurably depressed, and the parts of the brain that control emotional behaviour are also affected. At 0,3%, the person is commonly confused and at 0,4-0,5 %, the person falls into a coma. At higher levels, the primitive centres of the brain that control breathing and heart rate are affected that can result in death. The six stages of drunkenness are the jovial phase, the slurring phase, the can't see properly phase, the falling down phase, the down and out phase, and the valley of the shadow of death phase. Alcoholics often present with symptoms of depression such as dysphoria, agitation, apathy, suicidal ideation, loss of libido, early morning waking, loss of appetite and weight loss. Alcohol may also increase the likelihood of a successful suicide, as alcohol use is common immediately prior to or during suicide attempts. Anxiety and phobic symptoms may be causal factors for developing a drinking problem, as patients may attempt to control their anxiety and phobias by drinking, but the alcohol consumption may then in turn exacerbate the anxiety or phobia.

There are many physical complications resulting from the use of alcohol. As a dentist, the researcher has encountered numerous conditions of the oral cavity and surrounds, that are associated with alcohol abuse. He has also treated dental patients that suffer from hepatitis, pancreatitis and gastritis as a result of long term alcohol abuse and is familiar with these conditions. Knowing the devastating effect of alcohol once a person gets addicted to it, the researcher is of the opinion that, even if there are beneficial effects of small amounts of alcohol on the cardiovascular system, alcohol should be avoided if there is a possibility of alcohol dependency. Alcohol, when used in excessive amounts, can cause a variety of haematological, musculoskeletal, endocrine and metabolic disorders.

The effects of alcohol on the central nervous system can be summarized as alcohol withdrawal syndrome, nutritional deficiency syndromes, and alcohol toxicity.

The Central Drug Authority (CDA) released statistics indicating that the abuse of alcohol and the use of dagga (marijuana) has led to South Africa's being one of the top ten narcotics and alcohol abusers in the world. Social Development Minister, Dr Zola Skweyiya, has admitted that the country has a massive substance abuse problem.

CHAPTER 3

FACTORS IN THE DENTAL PROFESSION THAT CAUSE OCCUPATIONAL STRESS, ANXIETY AND BURNOUT

3.1 Introduction

The researcher, as a dentist, has personally experience of dentistry as a very stressful profession with many occupational stress factors. By definition, occupational stress implies that an individual perceives stress as a result of his/her profession. Roth *et al.* (2002: 43) are of the opinion that occupational stress is associated with many professions, including general dentistry. Hillman (1995: 50) claimed that stress-control is a major factor that contributes to the success of any dental practice and there is no single definition for stress, as people experience it in different ways. For this reason, Gorter *et al*. (1999: 144) reported that work-stress among dentists is not the same for all dentists. Work-stress, among dentists is determined as what is experienced as work-stress. The researcher supports this statement of Gorter *et al.* because what the researcher perceives as being very stressful in the dental profession, appears to be less stressful for some of his colleagues, and vice versa.

3.2 Definition of key concepts

3.2.1 Dentist and Dentistry

The Concise Oxford Dictionary (1999: 383) defines “dentist” as follows: “A person who is qualified to treat the diseases and conditions that affect the teeth and gums”. The researcher, being a dentist himself, is of the opinion that this definition does not actually describe the complexity of the profession, and agrees more with the following definition: “A dentist is a person who has received a degree from an accredited school of dentistry and is licensed to practice dentistry

by a state board of dental examiners. Also called odontologist. Dentistry is: (1) That department of the healing arts which is concerned with the teeth, oral cavity, and associated structures, including the diagnosis and treatment of their diseases and the restoration of defective and missing tissue. (2) The work done by dentists, such as the creation of restorations, crowns, and bridges, and surgical procedures performed in and about the oral cavity (Dorland's Illustrated Medical Dictionary, 2000: 473). The researcher, as a dentist himself, defines dentistry as a complex profession which includes aspects of multiple other professions, such as general medicine and psychology. The researcher agrees that dentistry is that department of the healing arts which is concerned with the oral cavity, the teeth, and associated structures, which includes disciplines such as restorative dentistry, prosthodontics, community dentistry, orthodontics, periodontology, oral medicine, oral pathology, oral radiology and oral surgery. However, the researcher is of the opinion that the broad knowledge of a dentist, concerning the practice of general medicine and other disciplines should be included in definitions as defined by different authors.

3.2.2 Stress

According to Van der Merwe (2004: 13), "stress is the physiological, emotional and behavioural response of a person seeking to adapt and adjust to internal and external pressures or demands. It is basically a physical survival response, leading to a fight or flight reaction". Stress can be anything that impairs the homeostasis (stability and balance) of the body. According to Bailliere's Nurses' Dictionary (2007: 370), stress can be any factor, mental or physical, the pressure of which can adversely affect the functioning of the body. The researcher defines stress among dentists as all those factors linked to the dental profession that result in behavioural changes by the dentist in order to cope.

3.2.3 Occupational stress

According to the Dictionary of Psychology (2001: 480, 716), an occupation is "specifically, any activity or set of activities carried out for purposes of earning a living" and the term stress in this sense is an effect; it is the result of other occupational pressures. Any occupation can have a lot of occupational stressors. According to Bailliere's Nurses' Dictionary (2007: 371), a stressor is any life event or change that causes a person stress and which in some circumstances may precipitate distress or deterioration in mental health. These factors may be physical, psychological or psychosocial. For the purpose of this study, the researcher defines occupational stress as the physical or mental strain that an individual endures as a result of the work he/she does for a livelihood.

3.2.4 Burnout

According to Bailliere's Nurse's Dictionary for nurses and health care workers (2007: 61), burnout is a term used to describe the result of chronic stress amongst workers, and commonly in members of the helping professions. It is characterized by chronic low energy, dissatisfaction and tension. According to Shelly *et al.* (1989: 9), burnout is a syndrome of emotional exhaustion, depersonalization, and reduced accomplishment that may occur among individuals who do "people work" of some kind.

3.2.5. Anxiety

The Dictionary of Psychology (2001: 42) defines anxiety as "a vague unpleasant emotional state with qualities of apprehension, dread, distress and uneasiness". Anxiety is distinguished from fear in the sense that it is objectless whereas fear assumes a specific feared object, person or event. According to Gillis (1986: 37), anxiety is not merely a by-product of stress, its biological purpose is to mobilize

physiological and psychological resources for survival so that a person can fight or flee.

3.3 Stress

Van der Merwe (2004:14) describes two different kinds of stress, i.e. external and internal stress. External stress comes from outside and is associated with stress resulting from workplace, interpersonal conflicts, relationships and balancing career and family life. Internal stress comes from inside us and it results from our body's ability to respond to external stress, and is determined by a variety of factors such as nutritional status, habitual behaviours, attitudes, thoughts, self-image, anger, fear, anticipation, imagination, memory, health, fitness, emotions and the amount of sleep and rest. The researcher is of the opinion that a dentist experiences both external and internal stress factors. Dental practice provides a dentist with numerous external stressors such as workplace, interpersonal conflict, relationship and balance between family and career stressors. The stressful nature of dentistry, resulting from external stressors, causes a lot of internal stress in dentists. A dentist is human and his/her ability to handle external stress will also depend on his/her nutritional status, habitual behaviours, attitudes, thoughts, self-image, anger, fear, anticipation, imagination, memory, health, fitness, emotions and the amount of sleep and rest he/she gets that results in internal stress.

Gale (1998: 30) claimed that dentists believe their profession is stressful because of patient behaviours and economic pressures. They say that physical symptoms of stress are easily observed but emotional stress is difficult to recognise, therefore the dental practitioner should become aware of physical and emotional problems as a result of stress in himself as well as others.

The researcher supports the findings of Meyers and Meyers (2004: 89) who claimed that research on stress in the health professions has mainly focused on

medical doctors and nursing staff and that, although dentistry is recognised as being stressful, only limited studies on stress linked to dentists have been conducted. These authors claim that dentistry is more stressful than any other health care profession, because of the nature and working conditions of the dentist. O'Shea *et al.* (1984: 48) claimed that although most dentists identified dentistry as more stressful than other occupations, they believed that other dentists were under more stress than themselves and that although dentists use a variety of ways to cope with their stress, a great percentage do nothing to cope with stress. When capability to perform dental procedures and practice management are taken into account, the researcher believes that certain dentists experience more stress than others. The researcher also believes that several dentists have ways to cope with their stress. However, he strongly believes and has observed that some dentists utilize unhealthy methods, such as alcohol abuse to cope with such stress.

According to Meyers and Meyers (2004:89), statistics on cardiovascular disease, alcoholism, drug abuse, divorce rates and elevated rates of suicide, among dentists, are considered to be relatively high. They link this to the fact that the typical life of a dentist is very stressful. Goldberger and Breznitz (1993) cited in Roth *et al.* (2002: 43) define stress as "all that is unpleasant, noxious, or excessively demanding", and Holt (1993) cited in Roth *et al.* (2002: 43) states that "the field of occupational stress is the study of those aspects of work that either have or threaten to have bad effects".

The researcher is of the opinion that all dentists practising dentistry, do not necessarily find it unpleasant, but for a great number of dentists it is very demanding, and for some dentists it even leads to bad consequences. Rada and Johnson-Leong (2004: 788) reported that dentists encounter numerous sources of professional stress that may have a negative impact on their personal and professional lives. They say that dentists are prone to professional burnout, anxiety disorders and clinical depression because of the nature of clinical

practice, and the specific personality traits common among those who decide to pursue careers in dentistry. Linked to this Freeman, Main and Burke (1995: 214) claimed that dental practice is the most stressful of the health care professions and dentists experience more physical and mental ill health than other health professionals as a result of occupational stress. According to them, dentists perceive potential occupational stressors on a daily basis, therefore they should attempt to achieve a relatively stress-free working environment and assess their emotional responses to the practice of dentistry. Moller and Spangenberg (1996: 347) surveyed the literature on stress in dentistry and found that research in this field has rendered conflicting results. They also found that not many studies compare the work stress of dentists with that of other professionals, making it difficult to know whether the stresses of dentists are specific to dentistry. The researcher believes that the nature of dentistry makes it a very stressful profession. In all professions there are certain factors, linked to a specific profession, that are stressful. However, a dentist works all day long in close contact with scared and fearful people, nobody enjoys visiting a dentist. The researcher is of the opinion that the fear of patients is transferred in a form of stress to the dentist.

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 reduces one’s ability to tolerate stress, but past experience enhances peoples’ ability to manage stress and to develop coping skills. As a dentist, the researcher has personally experienced in his years of practice that the effect of stress accumulates and coping will depend largely on the dentist’s state of mind and how he physically feels at that time.

Van der Merwe (2004: 30) makes it clear that those most susceptible to stress are people who have, amongst others, also anxious thoughts or feelings and they feel anxious, fearful and are tense most of the time. The researcher believes that dentists are very susceptible to stress because he experienced that dentists are anxious, fearful and tense, especially when they have to perform difficult procedures on difficult patients, children, and physically handicapped patients, or when they are forced to perform procedures they are not comfortable in doing.

3.4 Burnout

The researcher believes that burnout can easily occur in a dentist because of the nature of his/her work that involves close contact with patients on a daily basis and being under intense stress and pressure constantly. Van der Merwe (2004: 32) claimed that people who are under stress for a long time, who try to achieve too much, who are unable to turn down additional work, have high standards, do not like to delegate, provide emotional support constantly to others, and feel guilty when they spend time on themselves are at risk for burnout. The researcher is of the opinion that dentists fulfil many of these criteria. In a study to determine burnout and its causes in Finnish dentists, three aspects of burnout emerged, namely fatigue, loss of enjoyment of work, and hardening emotionally. Hardening implies that some dentists ceased to care greatly what happened to some of their patients (Murtomaa, Haavio-Mannila and Kandolin, 1990: 208). According to Shelly *et al.* (1989: 9-14) burnout is a syndrome of emotional exhaustion, depersonalization, and reduced accomplishment that may occur among individuals who do “people work” of some kind. The researcher is of the opinion that some dentists are emotionally exhausted, cease to enjoy what they are doing, and that they reach a state where they do not care much for their patients anymore. This can be contributed to burnout amongst these dentists.

Van der Merwe (2004:32) states that a person gets burntout when dealing continuously with a job or difficult situation. Hard driven, highly committed people

who try to accomplish too much in a short time, are most likely the candidates for burnout. Van der Merwe (2004: 32) describes the symptoms of burnout as loss of purpose, loss of motivation, detached from relationships, feeling tired, feeling that one is accomplishing less, and an increased tendency to think negatively. The researcher, as a dentist, has observed burnout symptoms as described by Van der Merwe (2004: 32) amongst several of his colleagues over the years. Most dentists are highly committed people, but unfortunately some try to achieve too much in too little time.

The researcher agrees with Van der Merwe (2004: 33) that dentists can avoid burnout by doing the following:

- They must make sure that they are still enjoying doing dentistry.
- They must have fun, pleasure and relaxation.
- They must get plenty of restful sleep and relaxation.
- They must learn to practice stress management techniques.
- They must learn to say “no”.
- They must constantly re-evaluate their goals and decide on what is important to appreciate life.
- They must reduce their commitments.
- They must follow a healthy diet.
- They must learn to delegate.
- They must exercise moderately, but regularly, by doing exercise that they enjoy doing.

3.5 Factors in the dental profession that cause occupational stress

Van der Merwe (2004: 16) describes stress in terms of mild, moderate and severe stress. The mild or brief type of stress is perceived in situations such as missing a bus, braking hard to prevent an accident, presenting a business proposal or losing a movie ticket. The moderate type of stress is found in

situations, such as working late once in a while to meet a deadline, preparing for a wedding and temporary absence of a child or partner. The severe, chronic, long term types of stress are found in situations such as divorce, death of a spouse or child, work stress (always working late and under pressure with little job satisfaction), constant feeling of fear and financial difficulties. The researcher believes that dentists also perceive these three types of stress. Mild stressors are: coming late once in a while, missing an appointment with a patient once in a while, his/her dental assistant being absent or late now and then, and a patient not turning up for a dental appointment. The researcher has experienced moderate dental stressors as working late once in a while, being called out on weekend days and public holidays, and doing advanced surgical procedures in a theatre using general anaesthetic. Severe, chronic and long term stressors, also experienced by the researcher, include financial issues, patients' demands and expectations, close contact with patients, the fear a patient has for you as a dentist, constant long working hours, and the fear of litigation. Subsequently, a description of sources of stress for dentists is discussed as reported by different authors:

3.5.1 Economic stressors

According to Mazey (1994: 13), stressors are particular 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. The researcher agrees that stress is a personal matter, what stresses one person does not necessarily stress another. However, there are stress factors in each dental surgery, such as economic conditions, difficult patients, inherent personality traits and physical constraints that have the potential to cause a dentist stress. Moller and Spangenberg (1996: 347) from the University of Stellenbosch investigated stress and coping amongst South African dentists in private practice and found that about 40% of the respondents reported extremely high stress levels, irrespective of where they were employed. Financial issues

were reported to be the most stressful stressor, followed by dealing with patients. The researcher, as a dentist, is aware that financial issues can be a major stressor for dentists because running a practice not only has high overhead costs, but a dentist also has to provide for himself and his family.

3.5.2 Practice management and stress

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. All of these factors are linked to good practice management. The dentist has to motivate a patient to be compliant and he has to inform a patient that ideal results are not always possible. A dentist's practice has to be organized in such a way that a patient feels comfortable to visit him, the physical strain of the work is reduced, economic pressures are limited and third party constraints are minimal. Wilson *et al.* (1998: 499) found that factors related to time management were, at that time, rated as major job stressors by dentists. Moller and Spangenberg (1996: 347) reported that dentists have difficulty in handling rising costs and have problems with medical aid schemes. The researcher is of the opinion that time management is an important factor in any dental practice. The researcher has experienced that once one runs late, with one patient, the time schedule for the rest of one's day is interrupted.

Gorter, Eijkman and Te Brake (2001: 54) are of the opinion that patient related aspects as well as external interference by government and insurance companies are considered the most stressful by dentists. The researcher fully agrees with this because legislation and the lack of payment from insurance companies places a big burden upon dentists. Moller and Spangenberg (1996: 347) reported that stressors which posed few coping problems, among South African dentists, were staff related problems, difficulties in keeping to

appointment schedules, working under constant time pressure, repetitive nature of the work, feeling isolated and the possibility of contracting viral disease. In the researcher's personal experience these factors have caused him stress but not as much as financial issues and working with patients (dental procedures).

Moore and Brodsgaard (2001: 73) reported that nearly 60% of 216 Danish private dentists perceived dentistry as more stressful than other professions. They ranked the most intense stressors as running behind schedule, causing pain, heavy work load, patients being late and anxious patients. They found that a patient's fear of pain, trauma in dental treatment, general psychological problems, shame about dental status, and economic excuses contributed to perceived stress among dentists. They concluded that some dentists appear to require more knowledge about dental anxiety and managing their own stress. The researcher agrees that dentistry is more stressful than other professions. The reason for this is that a dentist has to work all day long with fearful patients, nobody enjoys visiting a dentist and the fear of patients is directly transferred to the dentist. Humphris and Cooper (1998: 404) identified new stressors for general dental practitioners by qualitatively interviewing ten general dental practitioners. They identified new stressors in the dental profession for the period 1986-1996, that were not included in original classifications of dental work pressure. These new stressors included system changes in running a practice, patient expectations that were rising, aggression exhibited by some patients, the risk of cross-infection, and litigation. They found that the uncertainty in the feature of the organization of dental care provision was the most important new pressure of work that originated in that time. The researcher has also observed this phenomenon in South Africa and attributes this to the oversupply of dentists and fewer job opportunities. System changes, problems with medical aids, rising costs and the risk of HIV infection contribute a great deal to stress among South African dentists.

3.5.3 Job satisfaction and stress

Gilmour *et al.* (2005: 701) studied job satisfaction among general dental practitioners and came to the conclusion that stress was the factor that mostly contributed to job dissatisfaction among dentists. Moller and Spangenberg (1996: 347) investigated stress and coping amongst South African dentists and found that limited future career options were intense stressors among dentists. Shugars *et al.* (1990: 661) reported that the most satisfied dentists were older, reported higher income, attended more continuing education, and employed more dental auxiliaries than dentists who were the most dissatisfied. According to them, job satisfaction as a dentist can be linked to respect received as being a dentist, the actual process of delivering care, income derived from dentistry, relationship with patients, and reduced levels of job related stress. Linked to this Logan *et al*. (1997: 39) are of the opinion that every career has the potential for producing personal satisfaction and dissatisfaction, which is dependent on what an individual values in life. They found that variables that best predicted work satisfaction among dentists, were income, respect and patient relations. Variables that best predicted dentists' overall quality of life were income, professional time, and personal time. Although more than a half of the dentists that Logan *et al*. (1997: 39) surveyed were satisfied with their career, they were dissatisfied with their level of stress, professional environment (threat of malpractice litigation), and amount of personal time. The researcher is of the opinion that many dentists are not satisfied with their jobs and this can be attributed to the fact that dentistry is such a stressful profession. However, the researcher has also known dentists who actually love dentistry and have extreme job satisfaction. These dentists have a good income, respect from others and a very good relationship with their patients.

3.5.4 Dental procedures and stress, as well as overall stress

Bourassa and Baylard (1994: 65) indicated that stress is inherently present in the dental practice. They claimed that, apart from office organization and interpersonal relationships, stress is also related to dental procedures. Work stress forms an integral part of the overall stress that a dentist perceives in his lifetime. Meyers and Meyers (2004: 89) found that there are many factors that can cause occupational or job related stress among dentists, and to highlight the stressful nature of a dentist's work, they conducted a study to investigate overall stress, work stress and health in general dental practitioners. They found that work stress contributed highly to overall stress in a dentist's life. The researcher has personally experienced that in his job as a dentist, especially performing very difficult dental procedures, has contributed a lot to the overall stress in his life. The researcher is also of the opinion that a lack of updated knowledge (not attending continuous professional development causes) contributes a lot to the overall stress of a dentist.

3.5.5 Age and stress

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. This contradicted the general belief that getting older is accompanied by adaptation problems to life changes and more 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 for dentistry (Brand and Chalmers, 1990: 461). The researcher agrees that older dentists are more satisfied with their jobs than younger dentists and he attributes it to the fact that older dentists have learned to

overcome the pitfalls of dental practice and have learned to cope with dental stress in a healthy manner.

3.5.6 Working environment and stress

The researcher is of the opinion that the stress levels of dentists working in private practice are higher than those working in a more protected environment ,such as public hospitals and dental schools. The researcher has worked as a dentist in both the private sector and the public sector, and personally experienced that the private practice caused him more stress than working for the government sector. However, Moller and Spangenberg (1996: 347) reported that 40% of dentists' perceive extremely high stress levels, irrespective of type of employment.

3.5.7 Personality (Individual aspects) and stress

According to Weller (2007: 300), personality is 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. The researcher is of the opinion that one's attitude to life include one's ability to cope with stress. For this reason stress can be individualized. What is stressful for one person may not necessarily be stressful for another person. The researcher has personally experienced that what is stressful for him, in the dental profession, is not always stressful for some of his colleagues.

3.5.8 General health and stress

The researcher is of the opinion that one's health determines how much stress one can tolerate. 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.

3.6 Management of stress

The researcher agrees with Lewis *et al.* (1994: 183) that stress management techniques are coping skills that include cognitive and behavioural components such as:

- Taking one thing at a time
- Physical exercise to work your tension off
- Don't try to be a perfectionist
- Be humoristic
- Seek help when needed
- Make time for yourself
- Have hobbies
- Strive for moderation
- Sleep correctly and eat healthy
- Balance the costs and rewards of life

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.

The researcher is of the opinion that coping skills for stress management can be quite effective if they are acquired correctly. The dentist must identify what causes him/her stress to eliminate or at least reduce the harmful effects of such stress by developing healthy coping mechanisms. Once a dentist has identified the high risk situations he/she can learn to adapt to these situations in a forthright manner or simply avoid them.

A diversity of factors that cause occupational stress among dentists, has been described. The researcher believes that a dentists' stress can derive from many stressors but agrees, with other authors, that dentists stress can be as a result of patients' non-compliance, anxiety of patients, interpersonal relations with patients, the physical strain of the work, financial pressures, fear of litigation, and striving for job perfection in order to keep patients happy.

The researcher, being a dentist, believes that there is much uncertainty about what actually causes occupational stress among dentists. He strongly believes that even dentists themselves are uncertain of what causes them the most stress, and think that it is a combination of multiple factors such as treating patients on the one side and managing their practices on the other side, with their personal and family life in the middle. If a balance does not exist, and correct coping mechanisms are not in place, it results in consequences which are not always very pleasant.

3.7 Summary

External stress comes from outside us and internal stress comes from inside us. Internal stress results from our body's ability to respond to external stress. The stressful nature of dentistry, resulting from external stressors, causes a lot of internal stress in dentists. The physical symptoms of stress are easily observed but emotional stress is difficult to recognize.

The researcher believes that burnout can easily occur in dentists because of the nature of their work. Hard driven, highly committed people who try to accomplish too much in a short time are the most likely candidates for burnout.

Although dentistry is recognized as being stressful, only limited studies on stress linked to dentists have been conducted. Not many studies compare the work stress of dentists with that of other health professionals, making it difficult to know whether the stresses of dentists are specific to dentistry. There are mild, moderate and severe types of stress. The mild or brief type of stress is perceived in situations, such as missing a bus, the moderate type of stress is found in situations, such as working late once in a while to meet a deadline, the severe, chronic, long term types of stress are found in situations, such as divorce or death. The researcher is of the opinion that a dentist also perceives these three types of stress.

Stressors are particular 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. A dentist's stress is derived from the following sources: patients' compliance, pain and anxiety, interpersonal relations, the physical strain of work, economic pressures, third party constraints, the strain of seeking ideal results, time management, rising costs, problems with medical aid schemes, patient related aspects, external interference by government and insurance companies, staff related problems, difficulties in keeping to appointment schedules, working under constant time pressure, repetitive nature of the work, feeling isolated, the possibility of contracting viral disease, system changes in running a practice, patient expectations that are rising, aggression exhibited by some patients, the risk of cross-infection, and litigation.

The most satisfied dentists are older, report higher income, attend more continuing education, and employs more dental auxiliaries than dentists who are the most dissatisfied. Every career has the potential for producing personal

satisfaction and dissatisfaction which is dependent on what an individual values in life. Most dentists are satisfied with their career, but some are dissatisfied with their level of stress, professional environment (threat of malpractice litigation), and amount of personal time. Apart from office organization and interpersonal relationships, stress is also related to dental procedures. Work stress forms an integral part of the overall stress that a dentist perceives in his lifetime. Age differences may affect the stress patterns of dentists where older dentists have reported lower levels of stress.

As seen above, a diversity of factors can cause occupational stress among dentists. The researcher believes that a dentist's stress can derive from many stressors but agrees, with other authors, that dentists' stress can be as a result of patients' non-compliance, anxiety of patients, interpersonal relations with patients, the physical strain of the work, financial pressures, fear of litigation, and striving for job perfection in order to keep patients happy.

CHAPTER 4

THE PHENOMENON OF ALCOHOL CONSUMPTION AND ALCOHOL RELATED PROBLEMS AMONG DENTISTS

4.1 Introduction

Van der Merwe (2004: 21) states that the inability to cope with stress often leads to increased alcohol consumption, use of tranquillizers, use of recreational drugs and smoking in order to relieve exhaustion, anxiety and the pressures of life. Van der Merwe (2004: 21) is of the opinion that alcohol initially mimics the body's stress reaction but eventually causes depression. Alcohol may give a short term relief of tension (it may appear that it does), but in the long term it causes a change in behaviour and dependency that will in return weaken the ability to cope with stress considerably.

The researcher strongly believes that some dentists abuse alcohol as a coping mechanism, in order to cope with the stress of their profession. He also strongly believes that some dentists develop alcohol related problems that have a direct or indirect negative influence on their occupation, health and personal lives. Kenna and Wood (2004: 107) reported that substance related impairment among health care workers, including dentists, has been recognized by several professional organizations. They found that, when compared to the general population, health care professionals consume less alcohol. However, their findings suggested that dentists use significantly more alcohol than most other groups of health care professionals, and that a greater percentage of dentists reported lifetime minor dysfunctions, as a result of alcohol use, than any other health care group. The data that they obtained suggested that alcohol use by dentists may be independent of income and related more to the nature of the profession. Moller and Spangenberg (1996: 347) reported that drug use, in general, is low amongst dentists but they use alcohol in significant amounts. The

researcher believes that dentists, in general, appear to consume more alcohol than other health care professionals. The researcher socializes a lot with health professionals and has observed that some of his colleagues consume more alcohol than other health professionals.

4.2 Definition of key concepts

4.2.1 Alcohol consumption

The Concise Oxford Dictionary (1999: 306) defines the term *consumption* as "the action or process of consuming, an amount consumed". Dorland's Illustrated Medical Dictionary (2000: 397) defines consumption as "the act of consuming, or the process of being consumed". The researcher is of the opinion that some dentists consume alcohol, to relieve the stress and strain due to their profession.

For the purpose of this study *alcohol consumption* is defined as the quantity and frequent use or abuse of alcohol for reasons, such as a way of socializing, relaxing, calming effect, relief of depression, relief of frustration, relief of exhaustion, relief of emotional pain and stress, relief of loneliness, relief of anxiety, giving self-confidence, relief of work stress, and relief of physical pain and problems.

4.2.2 Alcohol abuse

The Dictionary of Psychology (2001: 21) defines *alcohol abuse* as a general label for any pathological syndrome associated with excessive alcohol use. A variety of characteristics is found in serious cases, including a daily need for alcohol, continuing consumption in the face of physical disorders, which are exacerbated by alcohol blackouts or periods of amnesia, extended alcoholic binges that last several days, repeated unsuccessful attempts to quit drinking, and overall mental and emotional deterioration. The researcher defines *alcohol abuse* as the

repeated intake of alcohol, despite the physical, emotional, social and psychological effects that may result, in order to cope with stress and anxiety. For the purpose of this study, *alcohol abuse* refers to the repeated intake of alcohol, to reduce the stress and anxiety of a dentist, in order to cope with his/her profession.

4.3 Alcohol consumption among dentists

The researcher found that there is not much literature available on the actual quantity and frequency of alcohol consumption among dentists. Newbury-Birch, Lowry and Kamali (2002: 646) claimed that research on alcohol consumption among dentists, mostly included dental students, and Kenna and Wood (2004: 107), while conducting a study to determine alcohol consumption among health care professionals including dentists, found that most of the research on alcohol consumption among dentists has been based on review articles, retrospective analysis of treatment seeking dentists, retrospective analysis of professionally censured dentists, or qualitative studies. Underwood, Fox and Nixon (2003: 265) claimed that research on alcohol consumption among dentists mostly involved early career dental practitioners. The researcher agrees that, although dentistry is described as a stressful profession, research concerning alcohol consumption among health care workers, seldom involves dentists.

In the United Kingdom, in a survey among undergraduate dental students, it was found that 82% of male and 90% of female undergraduate dental students consumed alcohol. Of these, 63% of males and 42% of females consumed alcohol in excess of the sensible weekly amount which the authors considered to be 14 alcoholic drinks for females and 21 for males (Underwood and Fox, 2000: 314). Rankin and Harris (1990: 2) found that most dentists used alcohol and/or drugs in moderation, but male and female dentists were more likely to use alcohol than any other drugs. Leggat *et al.* (2001: 348) reported that most dentists consumed alcohol on a weekly basis. The researcher believes that the

habit of alcohol consumption among dentists, already begins at dental school. Therefore, he conducted a study among dental students at the School of Dentistry of the University of Limpopo in 2006, to investigate alcohol use among dental students to relieve stress caused by the dental curriculum. It was found that undergraduate dental students experience a great deal of stress linked to their dental studies and a significant number of dental students consume alcohol in sensible amounts or in excessive quantities in an attempt to relieve such stress. Dysfunction as a result of alcohol use was also significantly reported of where getting behind in studies was the most significant effect.

Thomas, Randall and Carrigan (2003: 1937) claimed that several hypotheses exist to account for the higher than normal rate of alcoholism in an individual with high trait anxiety because anxious people use alcohol to cope with their anxiety, and most of these hypotheses claim that the use of alcohol to reduce anxiety may increase the risk of alcohol dependency in vulnerable people. The researcher believes that dentistry is a high trait anxiety occupation and that some dentists consume alcohol to reduce their anxiety.

The researcher is of the opinion that alcohol is the drug of choice among dentists because alcohol is easily available. To obtain alcohol, a dentist does not need to abuse his authority to prescribe mood altering drugs, to obtain it. However, the researcher believes that some dentists prescribe tranquillizers for themselves, because tranquillizers have the same mood altering effect as alcohol, but is less noticeable. Hedge (1982) cited in Kenna and Wood (2004: 107) reported that, as for the population as a whole, alcohol is the drug of choice for dentists, and Kenna and Wood (2005: 1023) are of the opinion that as in the rest of society, alcohol abuse appears to be the most notable substance use among dentists but there is little evidence suggesting that dentists are at a greater risk of developing alcohol related problems than the general public. However, they found in a previous study (Kenna and Wood, 2004: 107) that although health professionals appear to drink less than the general population, dentists consume more alcohol

than other health professionals. They claimed that although twice as many physicians as dentists reported to be heavy alcohol users, a great number of dentists reported heavy episodic alcohol use. Heavy episodic alcohol use refers to drinking five or more drinks at least once during the month, and heavy alcohol use refers to drinking five or more alcohol drinks at least at five occasions per month (National Survey on Drug Use and Health, 2003).

The researcher, after being in conversation with an expert, the late Dr. S. de Miranda during the period 1994-1996 from SANCA, came to the conclusion that more physicians are admitted for treatment of chemical dependency than dentists. However, more dentists are admitted for alcoholism than for drug addiction.

In a study that was conducted among 312 South-Australian dentists in 2003, it was found that hazardous levels of alcohol consumption were significantly present among South-Australian dentists. Winwood, Winefield and Lushington, 2003: 102). found that hazardous alcohol consumption, among South-Australian dentists, was about 2-4 times higher than the normative South Australian population, particularly among males and rural dentists. These authors claimed that although work stress was reported as significant by dentists, existing personal vulnerability factors may also be predictors of hazardous alcohol consumption. The researcher is of the opinion that some dentists are addicted to alcohol, but are not sure if their profession alone contributed to it. Some dentists, who are alcohol dependant, may be exposed to other vulnerability factors to develop alcoholism, such as genetic, biographical, social and environmental factors. However, even in these cases the researcher believes that occupational stress plays a major role in the maladaptive use of alcohol among dentists.

Moller and Spangenberg (1996: 347) investigated stress and coping with stress among South African dentists and found that the number of dentists using psychoactive substances was relatively low, but a fairly high number of dentists

took analgesics on a regular basis. However, alcohol consumption was reported fairly high. Forty-eight percent of the private practitioners and 41, 86% of the non-private practitioners took more than two beers, or two glasses of wine or two tots of spirits on a regular basis ranging from at least once daily to once weekly. They found that the dentists who used anti-depressants and analgesics on a regular basis had much higher stress levels than the dentists who regularly used alcohol and benzodiazepines or beta-blockers. However, the stress levels of dentists who regularly used alcohol were above the 60th percentile. They also found that rising costs was the most prevalent stressor among the group of dentists who used substances, except for the group of dentists who used anti-depressants, where time pressure was the most stressful experience followed by rising costs. In their study, they also found that dentists using alcohol, analgesics, benzodiazepines or beta-blockers on a regular basis experienced financial stressors most intensely (Moller and Spangenberg, 1996: 347).

As dentists in private practice are also business owners, the drive to be a successful businessman calls for a substantial amount of social interactions that may involve alcohol use (Kenna and Wood, 2004: 107). Hughes *et al.* (1992: 2333) and Mc Auliffe *et al.* (1991: 177) claimed that dentists consume more alcohol because of their income and socio-economic status. Kessler *et al.* (1994) cited in Kenna and Wood (2004: 107) reported that there is a relationship between increased income and frequency of drinking.

The researcher believes that dentists consume alcohol for a variety of reasons and for the majority of dentists it means no harm. The researcher also believes that a number of dentists consume alcohol for social reasons, but in the process they get addicted to alcohol. However, the researcher strongly believes that a number of dentists consume alcohol as a measure of stress relief linked to their profession. At first this measure may be beneficial, but because of tolerance, more and more alcohol has to be consumed to obtain the same calming and

relaxing effect, that results from alcohol use. Unfortunately, for a number of dentists, this results in alcohol dependency with devastating consequences.

4.4 Alcohol related problems among dentists

When it comes to alcohol abuse, what is applicable to the general population is also applicable to the 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”. In the current study the “client” refers to the dentist.

It has been reported that there are many difficulties that dentists encounter when their alcohol or drug dependency causes them to violate prescriptions of dental governing authorities (Lyon, 1996: 69). As far back as 1978, Forrest claimed that dentistry is both a rewarding and demanding profession and dentists’ well-being depends on how successfully they keep the rewards and demands of their profession in proper perspective (Forrest 1978: 361). Clarno (1986: 45) focused on the consequences of alcoholism and drug addiction within the dental profession and found that dentists who suffer from these diseases can be identified through certain behaviours (pattern of behaviours) that have personal, vocational and social consequences. These consequences are progressive and potentially fatal. He is of the opinion that colleagues, family, friends, other professionals and office personnel, perpetuates the illness of such a dentist because of denial. When denial is overcome, these people will no longer, by means of enabling, perpetuate the illness and such a dentist will be forced to seek help, voluntarily or involuntarily.

The researcher personally believes that close relatives, especially spouses of dentists with hazardous alcohol-drinking habits that result in consequences, do not report such dentists to the Health Professions Council of South Africa (HPCSA). The spouse of a dentist with an alcohol drinking problem will not seek help from the HPCSA, because of fear that the dentist will be deregistered, with financial implications for that family. However, a national strategy for managing impairment in students and practitioners registered with the Council, was compiled by a work group on impairment in students and practitioners of medicine and dentistry in 1996. This work group resolved that the Medical, Dental and Supplementary Health Service Professions Act, 1974 (Act No. 56 of 1974) be appropriately amended to clearly distinguish between offences of an improper and disgraceful nature, and impairment on the part of registered persons. Procedures for dealing with impaired students and practitioners, registered with the Council, should differ from procedures dealing with practitioners and students, registered with the Council, who committed offences of improper and disgraceful nature (The Interim National Medical and Dental Council of SA, 1996: 3). The researcher acknowledges that the intention of HPCSA is not to harm a dentist who is reported for alcohol abuse impairment. They do a thorough investigation and on the grounds of their findings will impose certain practice conditions on such a dental practitioner. These practice conditions are permanent or temporary suspension from practising as a dentist, practicing under supervision with progress reporting to the Council, compulsory counselling with progress reporting to the Council and restrictions on prescription writing depending on the degree of impairment. The researcher is of the opinion that, in the past, some South African dentists have been reported to the Health Professions Council of South Africa (HPCSA) for alcohol use/abuse problems. He subsequently arranged a meeting with Mr. T.C. Molokomme, a member of the Health Committee of the HPCSA to confirm this. 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.

Giannandria (1996: 73) reported that the most common impairments found among dentists were cognitive impairment, physical disability, chemical dependency, other addictions and mental illness. However, the most frequently cited cause for impairment among dentists was chemical dependence, and 70-90% of dentists that were reported to state rehabilitation committees, were reported for chemical dependency. Kenna and Wood (2004: 107) identified alcohol related problems which they described as minor and major alcohol related dysfunctions among health care workers and found that a greater percentage of dentists reported lifetime minor dysfunctions than any other health care group. The minor alcohol related dysfunctions among dentists that they identified, were getting behind in work, calling in sick or late, having trouble in getting along with people and worrying about their alcohol drinking habits. They also found that a significant number of dentists reported more than one of these minor dysfunctions. The major alcohol related dysfunctions they investigated were suicide ideation, accidents, providing less than best patient care and seeing a health professional because of their alcohol drinking habits. A significant number of dentists reported positive on these questions and some reported more than one of these major dysfunctions. What is very significant is the fact that they found that a greater number of dentists reported that they have been involved in some type of accident, or seen a counsellor as a result of their drinking, than any of the other health care groups.

The researcher is of the opinion that problems arising from alcohol use, relating to the dentist, can to a certain extent be generalized to the general population, e.g. motor car accidents, provide less than best working potential, absenteeism and suicide. However, the researcher strongly believes that because of the nature of dentistry i.e. close contact with patients, working in a small confined space (oral cavity), patient's fear of a dentist, and a dentist's fear of litigation, it is impossible for a dentist to work without damaging a patient in some way, or getting into trouble somehow, once he has reached the stage of alcohol dependency, which is defined by withdrawal symptoms.

Alexander (2001: 786) found that there is little valid evidence that dentists are more prone to suicide than the general population, however, female dentists may be more vulnerable. Bers (1980), cited in Alexander (2001: 786), said that the contemporary statistical origin of the belief that dentists commit suicide at a higher rate than the general population appeared to have occurred in the 1960s. The researcher, himself, is not sure if dentists are prone to suicide. However, the researcher personally knew two dentists that committed suicide. The one dentist experienced extreme stress due to his profession and eventually committed suicide. The other dentist used alcohol in excessive amounts over many years and eventually became so depressed that he committed suicide.

4.5 Summary

The researcher found that there is not much literature available on the actual quantity and frequency of alcohol consumption among dentists, and that research on alcohol consumption, among dentists, mostly included dental students and early career dental practitioners. Most of the research on alcohol consumption among dentists has been based on review articles, retrospective analysis of treatment seeking dentists, retrospective analysis of professionally censured dentists, or qualitative studies.

Research found that most dentists use alcohol and/or drugs in moderation, but male and female dentists were more likely to use alcohol than any other drugs. Dentistry is a high trait anxiety occupation and some dentists consume alcohol to reduce their anxiety, and alcohol is also the drug of choice among dentists because alcohol is easily available. However, some dentists take tranquillizers, because tranquillizers have the same mood altering effect as alcohol, but is less noticeable.

The literature indicated that health professionals appear to drink less than the general population, but dentists consume more alcohol than other health

professionals. Work stress is significantly reported by dentists, but existing personal vulnerability factors may also be predictors of hazardous alcohol consumption among dentists. Because dentists in private practice are also business owners, the drive to be a successful businessman calls for a substantial amount of social interactions that may involve alcohol use.

The negative effects of alcohol use may involve impairment of physiological, psychological, social or occupational functioning. It has been reported that alcoholism and drug addiction within the dental profession are progressive and potentially fatal. Procedures for dealing with impaired students and practitioners registered with the Council, differ from procedures dealing with practitioners and students registered with the Council, who have committed offences of improper and disgraceful nature.

A greater percentage of dentists have reported lifetime minor dysfunctions, such as getting behind in work, calling in sick or late, having trouble in getting along with people and worrying about their alcohol drinking habits than any other health care group. Major alcohol related dysfunctions that have been identified, among dentists, are suicide ideation, accidents, providing less than best patient care and seeing a health professional because of their alcohol drinking habits. It was found that there is little valid evidence that dentists are more prone to suicide than the general population. The contemporary statistical origin of the belief that dentists commit suicide, at a higher rate than the general population, appeared to have occurred in the 1960s.

The researcher is of the opinion that problems arising from alcohol use, relating to the dentist, can to a certain extent be generalized to the general population, e.g. motor car accidents, provide less than best working potential, absenteeism and suicide. However, the researcher strongly believes that because of the nature of dentistry, i.e. close contact with patients, working in a small confined space (oral cavity), patient's fear of a dentist, and a dentist's fear of litigation, it is

impossible for a dentist to work without damaging a patient in some way, or getting into trouble somehow, once he has reached the stage of alcohol dependency, which is defined by withdrawal symptoms.

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 (Delport, 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 (Delport 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.

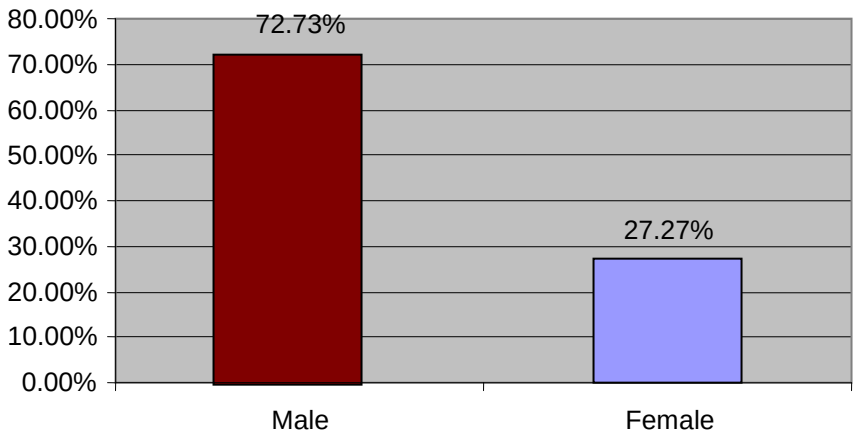
Subsequently, the findings of each of these biographical entities, linked to the literature, are discussed.

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.

Figure 1: Gender (n=77)

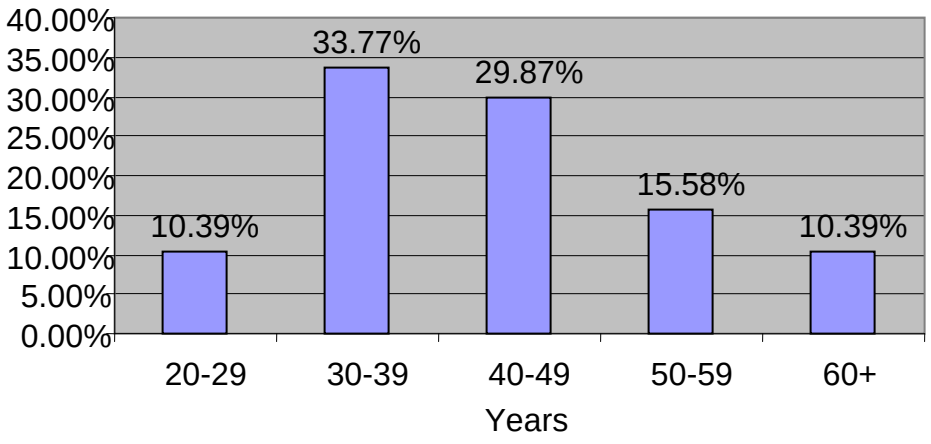


5.3.1.2 Age group

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.

Figure 2: Age group (n=77)

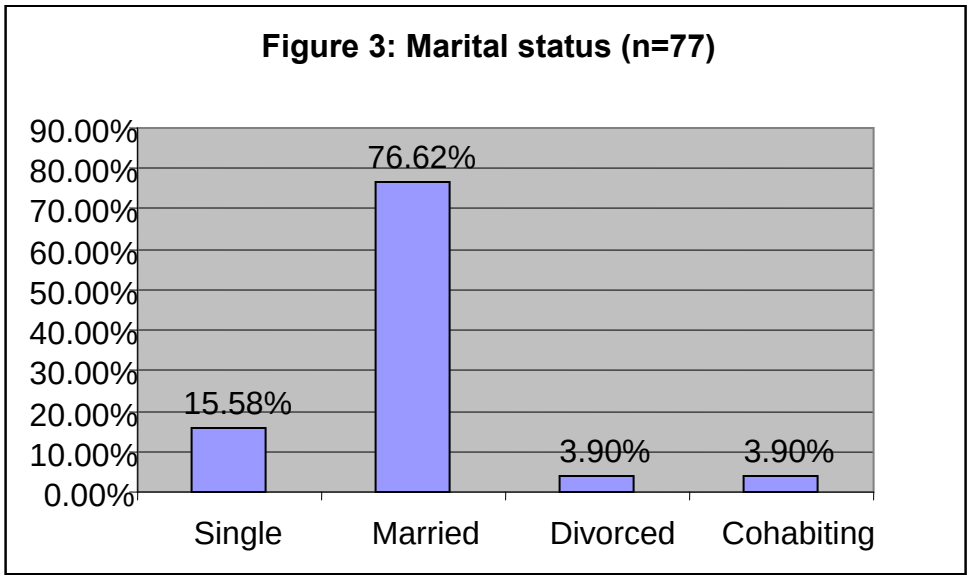


When the respondents were asked for how long they have been practising as dentists, their response correlated more or less with their age groups. Four (5.19%) respondents have been practising dentistry for less than one year, 23 (29.87%) for 1-10 years, 25 (32.47%) for 11-20 years and 25 (32.47%) for 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

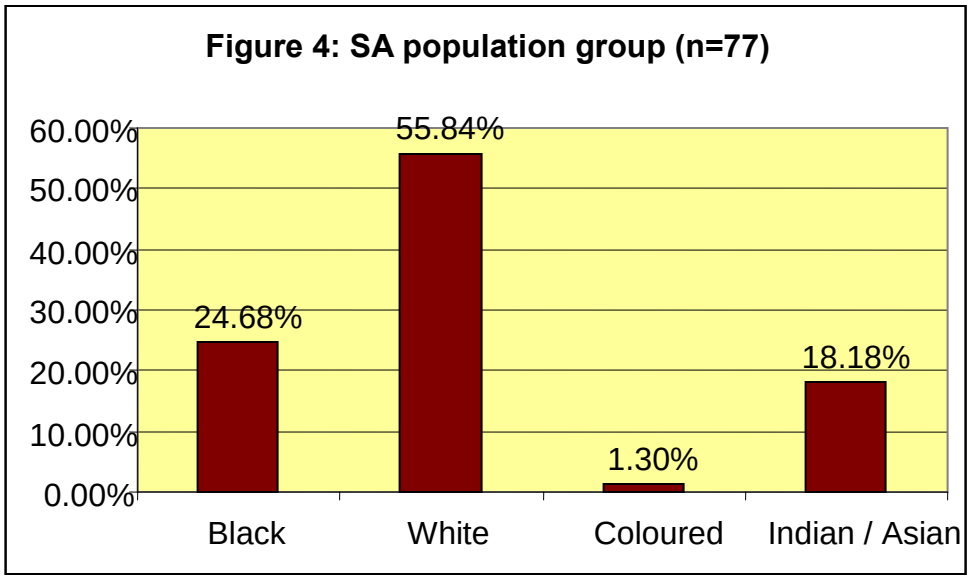
Most of the respondents grew up and attended school in the Gauteng province of SA. However, a significant number of respondents grew up and attended school in most of the other provinces. A very small percentage 2(2.60%) grew up and attended school outside the RSA. Although the sample is a sub-set of 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%).

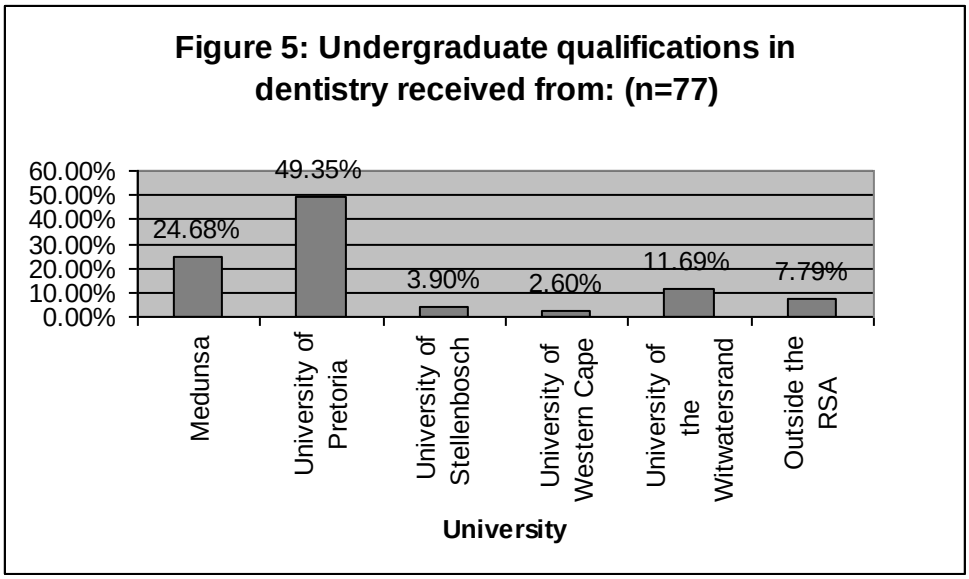
Although the majority of dentists were general dental practitioners in private practice, the sample used for this study represented all the employment possibilities for dentists.

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

Type of employment	*f*(%)
No response	*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%)

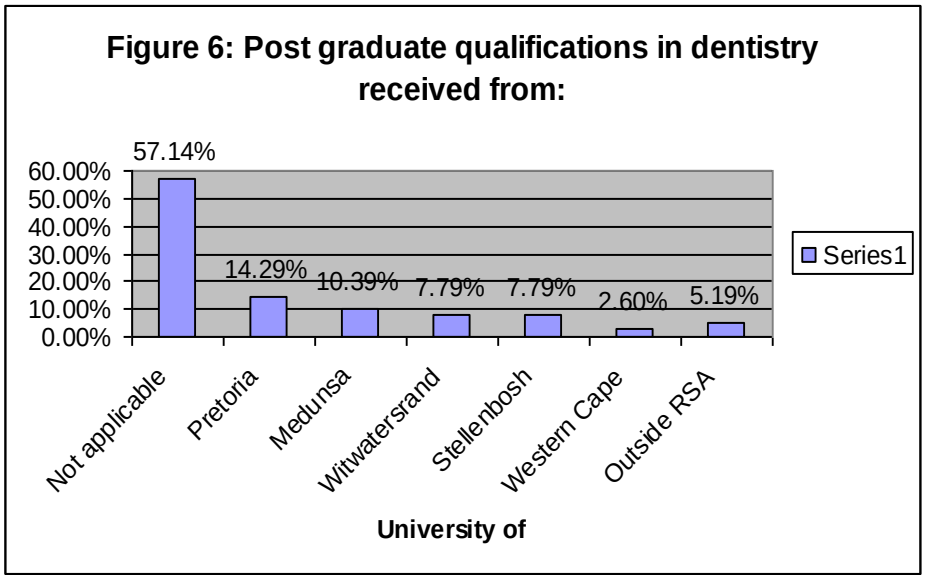
5.3.1.7 Undergraduate qualification (Bachelor degree in dentistry)

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 7: The number of towns, cities and villages that the respondents lived in during their scholastic years (n=77)

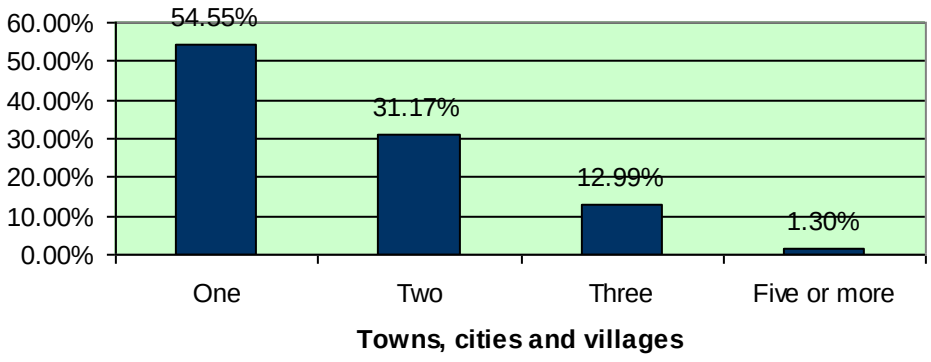


Figure 8: The number of primary schools attended (n=77)

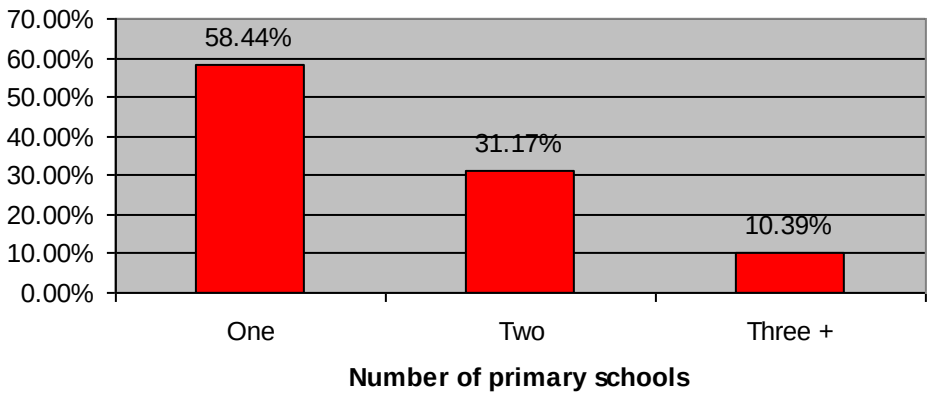
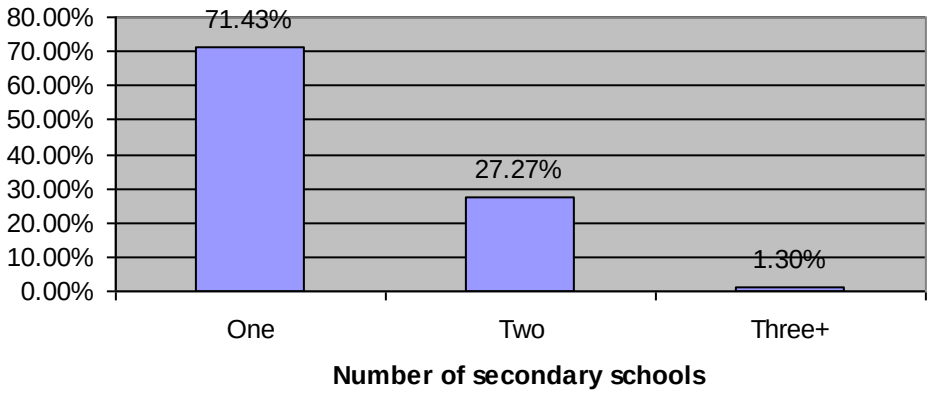


Figure 9: The number of secondary schools attended (n=77)



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	*f* (%)
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 *f* (%)	Poor *f*(%)	Satisfactory *f* (%)	Good *f* (%)	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 (McMurran, 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 McMurran (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 (McMurran, 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%)

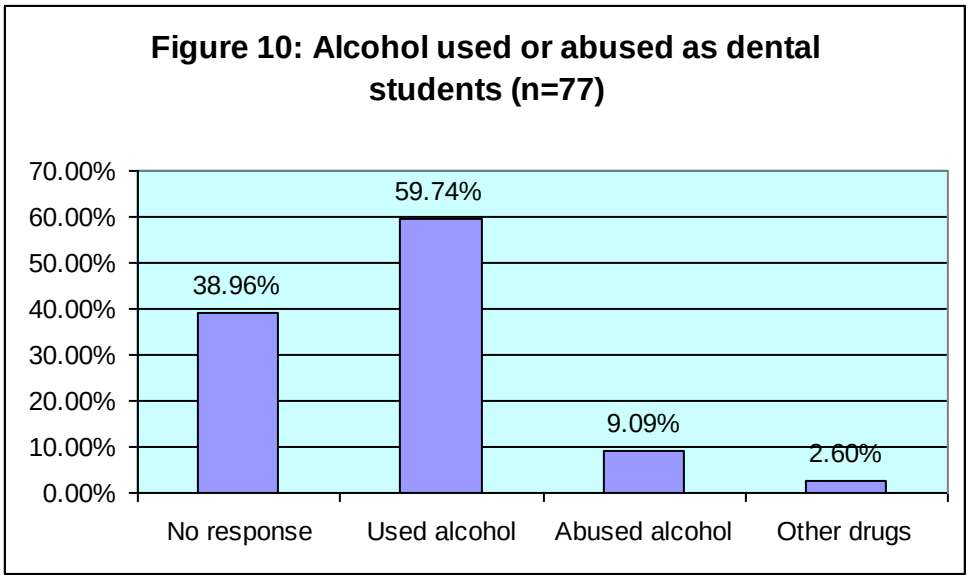
In this study, it was found that 14(18.18%) of the respondents reported that they experimented with alcohol during their scholastic years. The researcher believes that aspects of a person's childhood and school career can be linked to the social model and the learning model of addictive behaviour . A 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 *f* (%)	Reported positively *f* (%)	Total
Exercise	23 (29.87%)	54 (70.13%)	77 (100%)
Eating	58 (75.32%)	19 (24.68%)	77 (100%)
Music	40 (51.95%0	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.

Figure 11: Five or more drinks at least on 1 occasion per month in the past year (n=77)

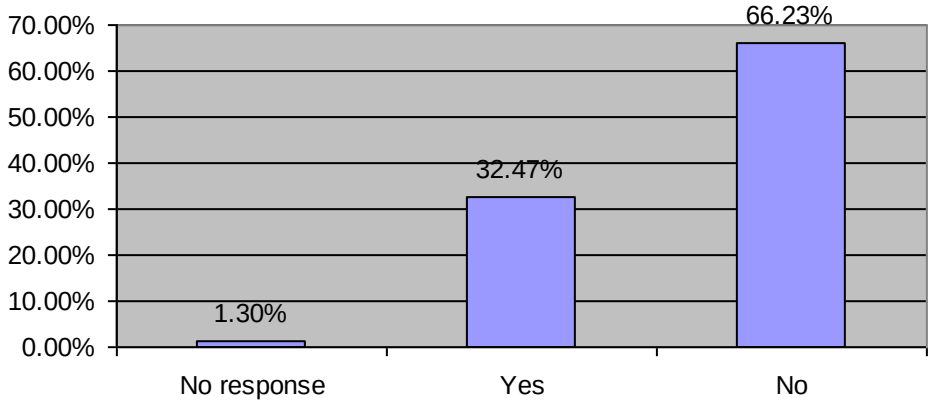
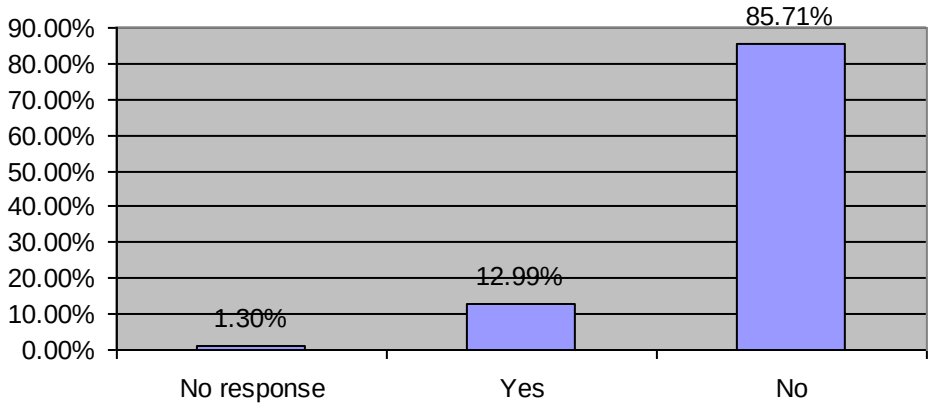


Figure 12: Five or more drinks at least on 5 occasions per month in the past year (n=77)



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)

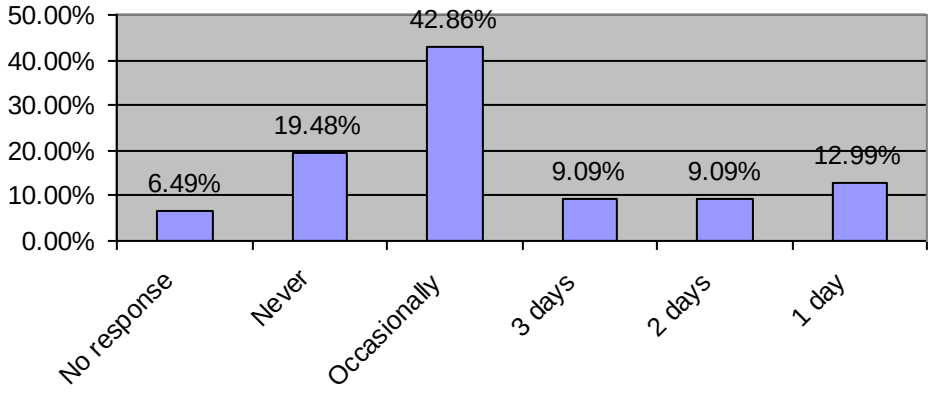
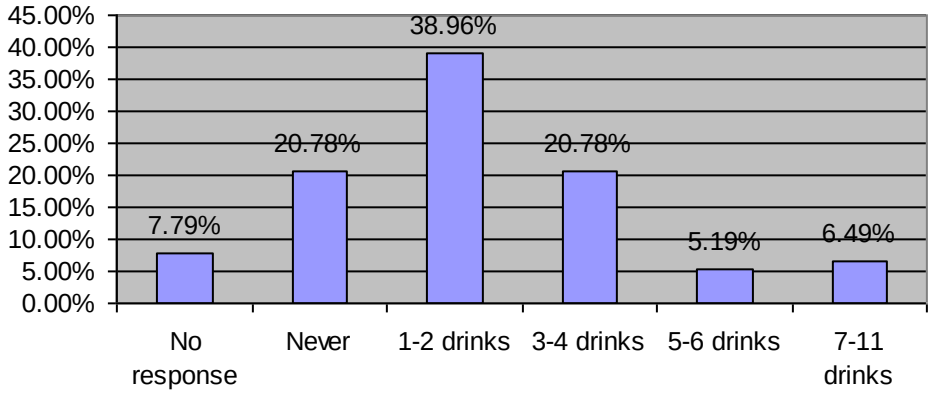


Figure 14: Number of drinks on a drinking weekend day (Friday-Sunday) (n=77)



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)

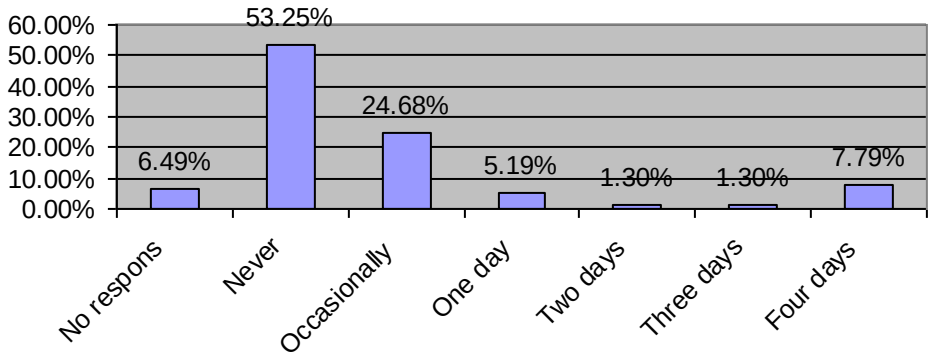
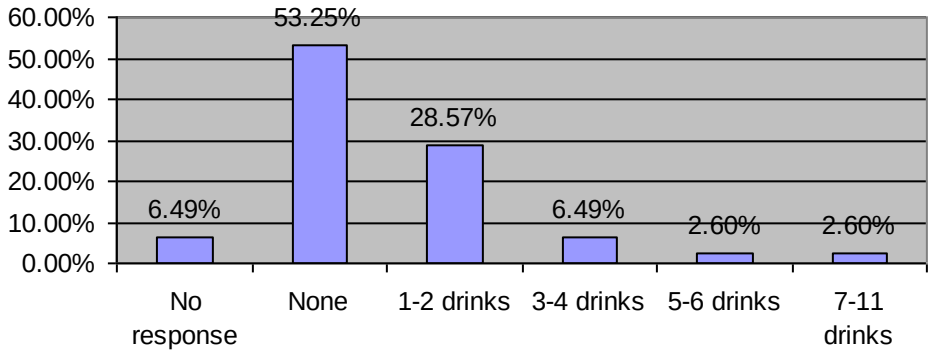


Figure 16: Number of alcoholic drinks the respondents drink on average on a drinking weekday (Monday-Thursday) (n=77)



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*(%)
No response	*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	*f*	%
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	*f*	%
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	*Freq*	%
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 1st 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 Guateng 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 are 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).

CHAPTER 6.

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

6.1 Introduction

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

This chapter consists of a discussion of the research methodology and the research findings of the qualitative phase of the study. The qualitative findings of the study are structured according to meaningful categories and themes to make comparisons and contrasts. Critical events in the life of the qualitative respondents are also emphasised to provide organizational structure.

6.2 Research methodology for the qualitative approach

6.2.1 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 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 (quantitative results were discussed in chapter 5) with a less dominant qualitative approach of which the results are discussed in this chapter (chapter 6). For the qualitative data collection the researcher used the collective case study where semi-structured interviews using an interview schedule, were conducted. Fouché (2002: 275) describes a case study as follows: "The exploration and description of the case takes place through detailed, in-depth data collection methods, involving multiple sources of information that are rich in context. These sources can include interviews, documents, observations or archival records". The researcher decided on semi-structured interviews, using an interview schedule, with dentists that have already had treatment for alcohol abuse or are self-characterized as problem drinkers.

6.2.2 Goal

The Oxford Dictionary (1995: 580) defines a goal as the object of a person's ambition or effort, a destination, an aim. Fouché (2002: 108) uses Neuman's definition of a goal, which basically states that the goals of research are exploratory, descriptive and explanatory.

The specific goal for this study is to explore alcohol consumption related to occupational stress and anxiety, and to identify alcohol related problems as a result of this way of coping.

6.2.3 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 has 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 among South African dentists alcohol use, abuse, and dependency related to occupational stress and anxiety.
- To compile a profile on alcohol consumption among South African dentists.
- 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.

6.2.4 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?

6.2.5 Methods of data collection

For the qualitative method, the researcher conducted semi-structured interviews, using an interview schedule, with dentists who have already had treatment for alcohol abuse.

6.2.5.1 Qualitative data collection

Data for the qualitative case study design can be obtained by means of interviews, documents, observations or archival records (Fouché, 2002: 275). The researcher used semi-structured, one-to-one interviews with an interview schedule as the qualitative data collection method in this study. Three respondents that have had treatment for alcohol abuse were interviewed by means of an interview schedule. According to Greeff (2002: 302), an interview schedule provides the researcher with a set of predetermined questions. The

researcher purposively selected five respondents for the interviews. The researcher planned to interview all of these respondents because they suited the criteria for the qualitative phase (already had treatment for alcohol abuse or were self-characterized as problem drinkers). Unfortunately, two of the respondents who characterized themselves as heavy alcohol users died before they could be interviewed. Because of ethical reasons (treatment facilities for alcohol abuse were reluctant to release names of dentists who received treatment for alcohol abuse), and the sensitivity of the topic, the researcher could not find other suitable dentists (respondents) to be interviewed in the place of the deceased ones. The interviews with the three respondents took place in the following manner:

- The respondents were willing to share their experiences concerning dental occupational stress and alcohol use, as a coping mechanism, with the researcher.
- The researcher arranged an interview appointment with each of these respondents at venues that were suitable for them.
- The researcher, with the respondents' signed informed consent, tape-recorded the interviews.
- Each interview was approximately 45 minutes in duration.
- Each of the respondents were asked the same questions according to a semi-structured interview schedule.

6.2.6 Sample (Sampling method)

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

6.2.6.1 Qualitative sampling

For the qualitative sampling, the researcher utilized the purposive or judgmental sampling technique as described by Bless, Higson-Smith and Kagee (2006: 106). They describe this technique as: “A sample is chosen on the basis of what the researcher considers to be typical units to be the most common in the population under investigation”. The criteria for the purposive sampling were South African dentists, male or female, irrespective of type of employment, race, age and geographical area, registered with the HPCSA that have had treatment for alcohol abuse or were self-characterized as problematic drinkers.

As ethical aspects are important in research, the qualitative sampling for this study was difficult, because alcohol treatment organizations were reluctant to reveal the names of dentists who had already received treatment for alcohol abuse or hazardous alcohol consumption, which was the planned method of acquiring possible respondents. However, the researcher has attended many group-therapy sessions over a very long period, where he has met dentists receiving treatment for alcohol abuse and addiction. The researcher telephonically contacted six of these dentists, of whom three agreed, as well as two dentist acquaintances who were self-characterized as heavy alcohol users to partake in this study by means of purposive sampling. In this way, the researcher managed to acquire five dentists (respondents) meeting criteria for the qualitative sampling. Unfortunately, the two dentists who characterized themselves as heavy alcohol users died before they could be interviewed, thus leaving three respondents for this phase of the study.

6.2.7 Method of data analysis

6.2.7.1 Qualitative data analysis

De Vos (2002: 354) clearly states that qualitative data analysis is the process of bringing order, structure, and meaning to the mass of data collected. The researcher made use of the data analysis procedure as described by Cresswell (1994: 153) who describes the process of qualitative data analysis as “eclectic”, in other words there is no right way, metaphors and analogies are as appropriate as open-ended questions. Data analysis requires that the researcher be comfortable with developing categories and making comparisons and contrasts. The researcher must be open to possibilities and see alternative explanations for the findings. Cresswell’s process as discussed in De Vos (2002: 340) was followed, namely:

- Collecting and recording data – The researcher used an interview schedule to conduct the individual interviews. Interviews were tape-recorded and then later transcribed according to categories that were divided into themes.

- Managing the data – The researcher organized notes and evaluated the merits of the transcribed data and he determined whether the data are authentic, valid, true and worthy.

- Reading and writing memos – After collection, the data were studied to enable the researcher to become familiar with the content as a whole, and to identify categories which were divided into themes and sub themes to see if similarities existed in the various categories.

- Describing, classifying and interpreting – The researcher searched for explanations and identified similarities in themes and sub themes from the

different respondents' views and compared them before describing the data. The researcher also verified this with the literature to substantiate it scientifically.

- Representing, visualizing – The researcher presented data in text and tabular form and verbatim quotes from the interviews to support the findings and then verified them with the literature.

6.3 Categories, themes and sub themes derived from the interviews for the qualitative part of the study

6.3.1 Category 1: History of alcohol dependency and treatment for alcohol dependency

The respondents reflected on the onset, causes and treatment of their alcohol dependency as follows:

Respondent 1

Quote: "*As a dental student I did not actually use alcohol. As a student, I only used alcohol during socializing events such as spring parties, intervarsity events, dating my girlfriend and so on. Alcohol was not used in my family. After my dental studies I went into dental practice but was also involved in the politics. All of these matters, linked to politics, such as board meetings and even the dental association meetings, on which I served, always ended in drinking sessions. At that time I was only a social drinker, and after each meeting I had a drink or two. I played golf for 30 years but currently I am playing bowls. With bowls it is the same as with golf, after each game we visited the pub to drink. This was basically my drinking pattern. I also practised in England for two years but did not drink a lot while being there. When it was cold I had a sherry or other alcoholic drink with my wife, but this was only in the evenings. About 5 years ago I had a small operation to restore a hernia but something went wrong with the general*

anaesthesia. I don't know who was at fault but, although I was fit and did not smoke, my lungs collapsed and I landed up in the intensive care of the hospital for 5 weeks. I went through a rough time and my practice took a dip. After this incident I did not use alcohol at all, and as the saying says "I was as dry as the pope". However, one day we won a bowls competition and to celebrate we visited a pub. I wanted to order an orange drink but my team mates convinced me to drink a beer. This ended up in drinking one beer after the other. This is where my big problem started and for 3-4 years after that, I drank heavily. It was also in that time that I retired. My drinking escalated and I eventually had to go for alcohol rehabilitation.

I refused to go for treatment. I am I type of a snob, I have achieved a lot in my life and I did not want to be associated and placed between those, whom I then called, plebs. Those other people, that were receiving treatment, were swearing and smoking, and I thought to myself "not in hell" am I going there. However, my children and wife and even the pastor of our church convinced me to go for treatment. I agreed, pocketed my pride and went for treatment. I learned a lot at the treatment centre but I am not sure of the success rate of these treatments. They told me that when I leave the centre I will be on my own, my sobriety will depend on myself but I do not think that I am really an alcoholic. At a support group I was informed that it is possible to drink socially again, and that is what I am currently doing".

Respondent 2

Quote: "*At school I did not drink, maybe now and then I had an unnoticed drink. My alcohol habits basically started at university. On Friday afternoons we went, as a group, to the Union hotel in Pretoria, to have a couple of beers and to chat. Around my 4th and 5th year at university my drinking sort of escalated. After my university days I went to England to work as a dentist. There, in the evenings, I had a couple of drinks. Across the practice where I worked were the Queens hotel and, after work, I visited it for a couple of drinks for the cold. When I*

returned to South Africa I continued to have a couple of drinks in the evenings after work. At that stage I classified myself as a weekend drinker or even weekend alcoholic. At weekends my wife and I would have had a couple of drinks, beer or wine, but then I would sneak out to my garage for some hard liquor. In my garage I used to hide these little bottles of liquor that they serve on the aeroplanes. So my wife did not know that I drank additional to the little bit we had together. I used to down a couple of these small bottles of liquor in my garage, and then dispose of the empty bottles by tossing them over the garden wall into the empty stand next to us. In the week, I would not say that I did not drink at all, but at weekends I made up for the drinks I did not have during the week. This is basically how my drinking started.

The first time I received treatment for alcohol abuse, I contacted a friend of mine, he was an architect and he and his wife were alcoholics and both received treatment for alcohol abuse at Castle Carey rehabilitation centre. I could not bluff my wife anymore, you know women are sensitive and they pick these things up. My wife started to notice that I don't only drink occasionally with her but I disappear and then get drunk. Things got so bad that my wife went back to England and took my sons with her. Then I really lost it and did not only drink heavy on weekends but also during the week. My practice took a dip and I started to sell my equipment for money. Anyway, this friend of mine told me about the Castle Carey rehabilitation centre and I went there. However, I did not stay there long and walked away because I thought the treatment were a lot of bull. You see, when my wife and children left me I was lonely and started to drink heavy, also on weekdays, mainly in the evenings. Before my wife and children left me I was only a weekend alcoholic, but after they left I became a twenty four hour alcoholic. I drank heavily at night and tried to recover by sleeping the next day. I basically drank my practice away and I eventually had to close the doors. I started to move around, not knowing where to go and eventually returned to Castle Carey rehabilitation centre. I did not like the manager of the centre very much, he was also a therapist at the centre. However, one day I went out of the

centre for a couple of hours and came back drunk. Anyway, this therapist told me that the program at Castle Carey is not sufficient for me, I need long term treatment and he took me to Magaliesoord. This is a long term treatment centre managed by the government. I stayed for a long period at Magaliesoord and eventually left the centre and went to my father. However, things were not well between my father and myself and I returned to Magaliesoord and stayed there for a second time. In that time my father passed away and I received a bit of money from his estate. I then stayed in Pretoria, in a hotel, and basically drank out all the money my father left for me. My brother, a lawyer, noticed what was happening to me and arranged for me to come to this rehabilitation centre. This happened about nine years ago and I am still here at the rehabilitation centre".

Respondent 3

Quote: "*Well, the use of alcohol as we all know starts by socializing with alcohol. I started using alcohol in my twenties, and only to socialize. I drank socially up to about 10 years ago, and then my drinking became more than social drinking. What caused me to drink more than the normal is difficult to say. I am a single person, never got married. My therapist said that the wine bottle became my best friend. When I was lonely I usually visited places where people drink. In the process of seeking company, I also engaged in drinking. I also played squash on a regular basis, at least four times a week, and after each game we went for a couple of beers. The drinking did not stop there, we then went to a friend's house for more socializing and drinking. What I am trying to say is that I was lonely, and in the process of seeking company, by visiting social events and doing sport, my drinking escalated to such an extent that it actually became a problem. There did not pass a day, in which I did not have a beer or two. This started to bother me, I could not identify one day in which I did not drink, but at that stage it had no influence on my work. Later on, this was a long time after I left private practice and worked for the university, I also started using alcohol during office hours. I did not drink at the office but would have alcohol somewhere else and then return to my office. I must say that I never used alcohol before seeing dental patients,*

only when I had to do academic related jobs. In any case, the people at work started to notice my drinking and my departmental head advised me to go for treatment before I get into big trouble. I did not want trouble at my work and agreed to go for treatment, in which he assisted me to get. To tell the truth, I did not want to go for treatment, indirectly my departmental head forced me to go by telling me that I am going to loose my job if I did not go for treatment. After the treatment, I returned to my job and was sober for about six months, and then started drinking wine again. The whole cycle repeated itself. The people at work noticed that I relapsed and my departmental head had no choice but to report the situation to the HPCSA. The council then forced me to go for a second treatment. For me, the second treatment was not as bad as the first one because I was, so to say, sober when I went for the second treatment. I definitely did benefit by the treatment, the second time more than the first time. When I went for treatment the first time I suffered extreme withdrawal symptoms, not so much alcohol withdrawal but benzodiazepine withdrawal. I did not inform the therapist that I also used benzodiazepine anxiolytic drugs with the alcohol. The benzodiazepine's were prescribed by my psychiatrist. So, during my first treatment I suffered the benzodiazepine withdrawal through on my own, remember I was admitted for the shorter alcohol programme and did not want them to know that I also used anxiolytic drugs. The multiple drug use programme is much longer. During the second treatment it was much easier for me because I only suffered mild alcohol withdrawal symptoms".

In Table 1 the history of alcohol dependency and treatment for alcohol dependency is discussed.

Table 1: Illustrated discussion of category 1: History of alcohol dependency and treatment for alcohol dependency.

Themes and sub themes	**Discussion**
Theme 1: Start of alcohol dependency and what caused it.	Alcohol dependency for each of the 3 respondents basically started by socializing with alcohol, first at university and then later on as dentists.
Sub theme 1.1: Socializing.	Socializing events during the respondents' university career contributed to their alcohol dependency. After university some respondents continued to use alcohol during socializing events and other activities they were involved in. These drinking patterns escalated and resulted in dependency.
Sub theme 1.2: Multiple treatment programmes.	The multiple drug treatment programme is longer and more intensive, than the treatment program for alcohol use only. Therefore one respondents was reluctant to admit that he also used other drugs simultaneously with alcohol.
Sub theme 1.3: Multiple treatments.	For all 3 alcoholic respondents more than one treatment as required.
Sub theme 1.4: Voluntary committal.	Family, spouses and other caring people convinced 2 of these respondents to go for treatment.
Sub theme 1.5 : Loss of family.	The direct family of one of the respondents separated from him because the treatment for alcohol dependency was not successful, and he even drank more.

Table 1: Illustrated discussion of category 1: History of alcohol dependency and treatment for alcohol dependency continued.

Themes and sub themes	**Discussion**
Sub theme 1.6: Unstable practice.	The practice of one of the respondents was financially unstable and this alcohol dependent respondent started selling his equipment in order to survive.
Sub theme 1.7: Too good for treatment.	One respondent felt too superior to go for treatment, and did not complete the treatment course and discharged himself from the treatment facility. This resulted in his being admitted for a second or even a third time.
Sub theme 1.8: Unsuccessful treatment.	All 3 of these respondents believed that the treatment for alcohol dependency is unsuccessful and it is a waste of time to go for treatment.
Sub theme 1.9: Unsuccessful practice.	One respondent literally drank his practice into the ground and eventually had to close the doors.
Sub theme 1.10: Homeless.	One respondent, who refused treatment, started to roam about and eventually landed up in a rehabilitation centre because he had nowhere else to go.
Sub theme 1.11: Re-admission.	For one respondent with a alcohol problem, not even long term rehabilitation programmes were sufficient and he was re-admitted time after time and eventually stayed permanently at a rehabilitation centre.

Table 1: Illustrated discussion of category 1: History of alcohol dependency and treatment for alcohol dependency continued.

Themes and sub themes	**Discussion**
Sub theme 1.12: Voluntary admission.	One respondent agreed to go for alcohol treatment because he was scared of losing his job, or being reported to the Health Professions Council.
Sub theme 1.13: Involuntary committal.	One respondent with an alcohol dependency problem was forced by the Health Professions Council to go for treatment.
Sub theme 1.14: Other drugs used.	One alcohol dependent respondent also used other substances such as tranquilizers with the alcohol, but was reluctant to inform the treatment centre about it. For this reason the alcohol treatment programme was not sufficient for him.
Sub theme 1.15: Denial.	Two of the respondents, despite serious financial problems, family problems and occupational problems as a result of alcohol abuse, did not believe that they were alcohol dependent and claimed that they could go back to social drinking after rehabilitation.

Erlank (2002: 01) claims that substance dependency is a universal phenomenon that does not distinguish between age, race, status, gender, or title, and substance use, abuse and dependency may occur regardless of a person's occupation. Dentists are definitely not an exception to this rule.

Socializing with alcohol during a dentist's university career, and there after, can escalate resulting in dependency. The researcher links this phenomenon to the social model of addiction. This model seeks explanation in the environment of the

individual, rather than internal characteristics (Murray, Hill and McGuffin, 1997: 258).

According to Meyer (1994: 165; cited in Doweiko, 1996: 50-51), research suggests that it usually takes about ten years of heavy drinking before the typical person becomes dependent on alcohol. However, once a person does become dependent on alcohol, even if that person stops drinking for a period of time, he or she will again become dependent in a matter of days to weeks. Thus, once an individual becomes dependent on alcohol, it is unlikely that he or she can return to non-abusive drinking.

6.3.2 Category 2: Background information of the family who raised the respondents

When the respondents were asked: Did you come from broken up family (parents divorced, separated, deceased, stepmother, stepfather)?, they reported as follows:

Respondent 1
Quote: *"No, my family were not broken up. I came from a very supporting and happy family and grew up with both of my biological parents".*

Respondent 2
Quote: "My family were very happy. My mother and father were happily married but my mother died a long time before my father. My brother also had an alcohol problem, but his was not as bad as mine. I think it was his work as a lawyer that forced him to drink such a lot, but he also had problems with his wife. My brother arranged for me to come to Wedge Gardens, but eventually also landed up here for alcohol treatment. He stayed here at Wedge for one month. Personally I do not think that my brother perceived as much stress from his work, as a lawyer, as what I perceived being a dentist".

Respondent 3

Quote: "*I grew up in one of the happiest families one can imagine. There were a strong family bond between us all. We were four children and all of us stayed with my mother and father up to the age of about twenty four. There were no unpleasantness in our family, my mother and father never argued, we were all happy. My relationship with my brother, two sisters and parents were wonderful".*

When the respondents were asked to describe the relationship they had with their parent(s) / guardian(s) with whom they grew up, they responded as follows:

Respondent 1

Quote: "*My parents were fantastic".*

Respondent 2

Quote: "*Very, very well, there was only love in our family".*

Respondent 3

Quote: "*My relationship with my brother, two sisters and parents were wonderful"*.

When the respondents were asked to elaborate on the drinking habits of their parent(s) / guardian(s), with whom they grew up, they responded as follows:

Respondent 1

Quote: *''As I said, my parents did not use alcohol. My father did at occasions have a whisky but this was very seldom, maybe on Christmas day or so on".*

Respondent 2

Quote: "*My mother didn't take a drop of alcohol up to the day she died, she didn't even drink a glass of wine. My father had two drinks every night of his life. He drank Cain spirits because he believed it is good for one's health. He said, use*

Cain for the pain. In my close family, except for my brother, there were no relatives with an alcohol problem".

Respondent 3

Quote: "*My mother did not drink alcohol. My father, after his retirement, had a drink or two a day. He did not drink much, I don't think that he ever had more than two drinks a day. My problem definitely did not come from my parents, they only set a good example".*

When the respondents were asked if any of their parents used prescription drugs or street drugs on a regular basis, they responded as follows:

Respondent 1

Quote: *''My mother, after my father died, took a bit of a dip and became depressed for which she received tablets. However, we booked her into an old-age home and she recovered fully and did not need medication anymore".*

Respondent 2

Quote: "*My parents used no substances such as sleeping tablets, tranquilizers etc. When my mother suffered from cancer, which also caused her death, she used heavy pain killers such as morphine, but this was only therapeutic".*

Respondent 3

Quote: *''Nothing at all. My parents did not use any mood altering drugs".*

When the respondents were asked to describe the financial position of the family who raised them they responded as follows:

Respondent 1

Quote: "*We were not poor and definitely not rich, we had a good life. My father worked for the railways and did not receive much money, but we lived well, had*

enough to eat and were healthy. We lived in a nice house and there were no real poverty. The financial status of my family did not affect me in any way".

Respondent 2

Quote: "*I grew up in a poor family. My father left school at a very young age and went to the farm. My mother became a teacher, but only for sub A classes. There were not a lot of money, but enough. My parents were poor but it did not bother me because there were very little wealthy people in our vicinity. The financial status of my parents did definitely not contribute to my alcohol dependency".*

Respondent 3

Quote: "*My father was the manager of a relatively big business, but he only received a salary. We received everything we needed although not in excess. My father paid for the university training of all four of his children. He had to count his pennies. The financial status of my parents did not affect me in any way".*

When the respondents were asked if they ever used prescription or street drugs on a regular basis they responded as follows:

Respondent 1

Quote: "*No I have never used prescription drugs or street dugs. Currently I am only using medication for cholesterol and a low grade of diabetes. I have never used tranquilizers or any sleeping tablets or the so called street drugs".*

Respondent 2

Quote: "*I have never used prescription drugs on a regular basis. My knowledge concerning pharmacology helped me in the past not to substitute alcohol with prescription drugs. Presently I only use a beta-blocker every day for high blood pressure. I definitely have never used any street drugs and I think that this habit of using medicines to get a high is a lot of nonsense. I have never used tranquilizers".*

Respondent 3

Quote: "*Except for alcohol I also used benzodiazepines. I diagnosed myself as being depressive and consulted a psychiatrist. He prescribed me an anti-depressant and one of the benzodiazepines, an anxiolytic drug. At that stage, it was just before I went for my first treatment, I used alcohol and the benzodiazepine at the same time. I used the benzodiazepines as prescribed, but I must admit that I longed for the feeling it gave me when I did not take it. The combination of these drugs and alcohol was definitely not good for me. During my first treatment I did not mention to the therapist that I also used benzodiazepines in fear that my treatment programme will be longer. My withdrawal was much worse than that of others that only used alcohol. I have never used any street drugs".*

In table 2, background information of the families who raised the respondents is discussed by means of themes and sub themes.

Table 2: Illustrated discussion of category 2: Background information of the families who raised the respondents

Themes and sub themes	**Discussion**
Theme 1: Family history and stability.	All 3 respondents came from stable and happy families.
Sub theme 1.1: Happy childhood.	All 3 the respondents came from a very happy family which did not contribute to their alcohol dependency.
Sub theme 1.2: Stable family.	All the respondents that participated in the qualitative phase of this study came from stable families that did not contribute to their alcohol dependency.

Table 2: Illustrated discussion of category 2: Background information of the families who raised the respondents continued.

Theme 2: Relationship with parent(s) / guardian(s).	All the respondents of the qualitative phase had a very good relationship with their parents with whom they grew up.
Sub theme 2.1: Family relationship.	The respondents had a good relationship with their parent(s) / guardian(s) with whom they grew up and this relationship did not contribute to their alcohol dependency.
Theme 3: Alcohol drinking habits of the respondents' parent(s) / guardian(s).	From the theme "alcohol drinking habits of the respondents' parent(s) / guardian(s)" it can be concluded that the genetic theory of substance dependency did not play a role in the alcohol dependency of any of the respondents that were interviewed. None of the respondents reported an alcohol dependency problem among their parents.
Sub theme 3.1: Social drinking.	The parent(s) / guardian(s) of the respondents did not have an alcohol problem. Two of the respondents reported that their fathers had 2 alcoholic drinks a day. However, this is seen as normal drinking.
Theme 4: Prescription drugs or street drugs used by the respondents' parent(s) / guardian(s).	The theme "prescription drugs or street drugs used by the respondents parent(s) / guardian(s)" indicated that none of the respondents' parents used prescription drugs or street drugs.

Table 2: Illustrated discussion of category 2: Background information of the families who raised the respondents continued.

Sub theme 4.1: Prescription or street drug history.	The respondents' parent(s) / guardian(s) did not use any prescription drugs or street drugs on a regular basis except for therapeutic reasons. Thus it could not have been a contributing factor to the respondents' alcohol dependency.
Theme 5: The financial position of the respondents' family.	All the respondents came from families that had an average income.
Sub theme 5.1: Financial position.	All of the respondents that participated in the qualitative phase of this study were, as children, not wealthy but definitely not poverty stricken.
Theme 6: Prescription or street drugs used on a regular basis by the respondents.	Only one of the respondents of the qualitative phase of this study used an anxiolytic drug simultaneously with alcohol. The other 2 respondents did not use prescription mood altering drugs at all. None of the respondents used street drugs.
Sub theme 6.1: Multi-drug use.	One of the respondents used one of the benzodiazepines, an anxiolytic drug, simultaneously with alcohol.

The disease model alone does not fit all the facts that could lead to substance dependency. 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. Somehow, this whole range of factors that influence behaviour must be taken into account in any approach to understanding addiction (McMurran, 1994: 31-33).

Psychologists view behaviour (all kinds of behaviour and not just addictions) as determined by a multitude of factors, which includes family relationships (McMurran, 1994: 31-33).

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 Research…, [Sa]).

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).

We must always bear in mind that alcoholism does not result from a genetic and medical 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.

According to Schuckit (2001: 2561-2562) ethanol has cross tolerance and shares a similar pattern of behavioural problems with other brain depressants, such as the bezodiazepines and barbiturates. For this reason, the respondent reported that his withdrawal symptoms, during treatment, lasted much longer than the withdrawal symptoms of the other patients who received treatment for alcohol only.

6.3.3 Category 3: Stress factors in the dental profession linked to alcohol use

When the respondents were asked: Which part of being a dentist or dental specialist, causes you the most stress and strain?, they responded as follows:

Respondent 1

Quote: "*Dental issues and working as a dentist caused me some stress, but not extreme stress. For 44 years I worked with dental patients and it never bothered me".*

Respondent 2

Quote: "*My stress came from punctuality. Time is precious to me, I will not say that I was never late for an appointment, but I try to plan my time. I get upset if people are late for appointments because, in practice, patients that turn up late disrupts your program for the rest of the day. This caused me extreme stress. Difficult patients with high expectations and difficult dental procedures stressed me and this contributed to my drinking above the norm".*

Respondent 3

Quote: "*During private practice there were no situations in my practice that made me use alcohol to cope. I coped with dental stress easily and only used alcohol socially. Even when I joined the university as a staff member, clinical dental work never stressed me. However, the dental academic world e.g. working out dental curricula etc stressed me a lot and this contributed to my alcohol problem".*

When the respondents were asked: What ways did you utilize, in the past, to relieve stress caused by the dental profession?, they responded as follows:

Respondent 1

Quote: *"I worked my stress off. I kept myself busy and tried not to think about the stress linked to the profession. I said to myself "the work has to be done, tackle it and get it over". I always had a good assistant that helped me, and when I got home at approximately 18h00 in the evening, I had one or two glasses of wine or a whisky with my wife, and then the day was also over".*

Respondent 2

Quote: "*This is a very good question? To tell the truth, I had good support from my wife but I was not honest with her. I kept my booze in the garage and boozed my stress of the day away, thinking that she did not notice it. Knowing that my wife did not want me to drink such a lot I drank in the quiet to relieve my stress of the day. In the beginning it was mainly on weekends but later on also in the evenings after work. Next to my practice was a liquor store, after work I got myself a couple of drinks, drank it in the car on my way home. When I got home I already had a couple of drinks but my wife did not know it. Then I would have a drink or two with her, and because she did not want me to drink a lot, I would disappear to my garage and drink further on my own. This was my main way of escaping dental stress that I perceived during the day. I also used to go running to relieve the stress caused by my profession. I used to go running often and it made me feel more relaxed".*

Respondent 3

Quote: "*I mostly played sport. Remember I am single and after work I went to places to socialize and to speak to people. I also played squash on a regular basis. At these places alcohol was used on a regular basis. My drinking did not start as a result of dental stress, but mainly due to socializing after work"*

When the respondents were asked: What do you currently do to relieve the stress of the dental profession?, they responded as follows:

Respondent 1

Quote: "*I am retired and have no more stress linked to the dental profession. Currently my biggest worry is to stay alive and make a living".*

Respondent 2

Quote: "*For the last 9-10 years I have not been practising dentistry because of being in and out of rehab centres all of this time. In and out of Castle Carey, then*

Magalies Oord and for the last 9 years here at this rehab centre. But you will not believe me, the stress of dentistry is still bothering me, not in the sense that I am doing it, but in the sense that I am not doing it. I often think of the past, when I was a practicing dentist. Now I am sitting here in a rehabilitation centre, I have the qualifications and can do dentistry, but I don't. My parents suffered financially to get me through university but now I am sitting in a rehab centre, and not practicing my profession. Financially I have nothing, but I know that I have the skills to earn a good living as a dentist, but I don't. You see now why I say that dentistry is still causing me stress although I am not practicing it".

Respondent 3

Quote*: "As I said, my stress in the dental profession did not derive from working with patients and doing difficult dental procedures etc. My dental stress began when I entered the dental academic world at the university, post graduate studies, dental curricula etc. In my new position at the university I need not do these matters anymore, and I avoid such situations. My therapist also advised me to stay away from doing things that will stress me up. I don't place myself in situations which I know I won't be able to cope with".*

When the researcher asked the respondents: Did you ever have the need to have a drink before performing a difficult dental procedure, and why?, they responded as follows:

Respondent 1

Quote: "*No, not before performing a dental procedure, maybe after the procedure to unwind".*

Respondent 2

Quote: "*I can say with honesty that I never used alcohol just before I had to treat a patient. Even if it was a very difficult patient or a difficult procedure, I faced it, and did it. Even If I had a hang over from the previous nights alcohol abuse I did*

not take alcohol for the so called hang over. I rather stayed away from my practice and tried to sleep my hang over away. However this did not count for Sunday mornings. Usually after a hard drinking session on a Saturday I would, on a Sunday morning drink in my garage, trying to keep it unnoticed, in an attempt to feel better".

Respondent 3

Quote: *"No, I have never had the need to have a drink to perform any dental procedure. As I said my drinking did not start as a result of dental stress in my private practice. I coped well with that sort of stress, it was the academic related issues, curriculum planning etc. as a lecturer that caused me stress to such an extent that I used alcohol to cope".*

When the respondents were asked: How did alcohol enable you to cope with the stress and strain of the dental profession?, they responded as follows:

Respondent 1

Quote: *''Alcohol has definitely helped me to calm down and unwind from the days procedures, that is how alcohol works".*

Respondent 2

Quote: *"Alcohol definitely helped me to cope with my work as a dentist. However, this was just a temporarily measurement. When I boozed at night, in an attempt to try and forget the days stress at office, it helped but the next day all the worries and bad feelings were back again and the situation was even worse. I would say that alcohol had a positive effect for me but this was only a temporarily positive effect".*

Respondent 3

Quote: "*In private practice I never used alcohol to cope with work stress. When I was still in private practice I never used alcohol during the day, and definitely not*

to cope with work stress. At that time I also did not use alcohol on a daily basis. Stress as a result of the private dental practice definitely did not make me drink. But when I ended up in the dental academic world, at the university, alcohol definitely helped me to cope with the stress linked to the dental academic world".

When the respondents were asked: At what stage of your career did you realize that your drinking habits had become a problem?, they responded as follows:

Respondent 1

Quote: *''During my career I never realized that alcohol could become a problem for me. It was only after my retirement that I realized that I actually have a problem with alcohol".*

Respondent 2

Quote: *''When I returned to South Africa, after my stay in England, I worked for a year in a government hospital and wanted to specialize but decided against it. Then I worked at the Dental School of the University of Pretoria for one year and then toured through South America for two years. During this time, I would say that, my drinking was not such a big problem. However, after I started private practice with all of its problems, alcohol became a problem for me. In other words, while I was working for somebody, alcohol was not such a big problem, but it became a big problem when I went into private practice. It was definitely the stress of the private practice, financial issues etc. that contributed to my drinking way above the norm".*

Respondent 3

Quote: *''It was in the advanced stage of my academic career at the university. Approximately 12 years ago I realized that alcohol has become a problem for me. At that stage I did not worry much about my drinking, but when I realized that there did not pass a day without me drinking it started to worry me".*

When the respondents were asked: Did dentistry contribute to the fact that you became alcohol dependent?, they responded as follows:

Respondent 1

Quote: "*No, I don't think that dentistry contributed to my drinking problem, there were other outside factors. I practiced my profession for 44 years and it was never the reason for my alcohol abuse. I never longed for a drink immediately after a difficult procedure. When I got home at night it was a different matter, then I had a drink, but the profession with all of it's trouble and stress never forced me to drink. When you use alcohol to cope, you think you are well and coping, but everybody around you can see that you are not well".*

Respondent 2

Quote: *"Yes, for sure. Because of time constraints and other dental pressures I used alcohol to cope, realizing that it is only a temporarily measure. Most likely I would not have become alcohol dependent even if I chose another profession, but this is difficult to say. Personally I feel that dentistry is one of the most stressful professions and it definitely contributed to my alcohol dependency. I believe that there are many dentists who uses alcohol to relief there stress. There are many dentists that use alcohol. Some to a lesser degree, some a bit more, and some, like me, to an extreme degree. Some of my colleagues and class mates, at dental school likes to take a drink but not to the degree that I did. Alcohol was the reason that my family and practice eventually broke up".*

Respondent 3

Quote: "*It is not dentistry that made me an alcoholic. If I had another profession the same thing would have happened. It is other environmental factors that caused me to drink. It is linked to my personality, other personal factors contributed to my alcohol dependency. I would have become an alcoholic even if I were a history teacher. On the other hand, even if I don't want to say it out loud, I noticed in my circle of friends, that there are dentists that drink above the norm*

because of their profession. I have socialized with people in many occupations such as policemen, advocates etc. and found that dentists tend to drink a little more than people in other professions. Personally I feel that dentistry is more stressful than other professions. A dentist works with tense people the whole day long. Everybody is scared and tense when they visit the dentist because it is not pleasant to go for dental treatment. This stress that the patient has, while undergoing dental treatment, is carried over to the dentist".

In Table 3 stress factors in the dental profession linked to alcohol use are discussed by means of themes and sub themes.

Table 3: Illustrated discussion of category 3: Stress factors in the dental profession.

Themes and sub themes	**Discussion**
Theme 1 : Causes of stress in the dental profession.	Dental issues and working as a dentist caused the respondents some stress, but not extreme stress. However, one respondent reported that dentistry caused him extreme stress.
Sub theme 1.1: Punctuality and stress.	One of the respondent's stress originated from punctuality. It stressed him extremely if patients were late for appointments because it disrupted his appointment schedule.
Sub theme 1.3: High expectations and stress:	Difficult patients with high expectations and difficult dental procedures caused one of the respondents stress and this contributed to his drinking above the norm.

Table 3: Illustrated discussion of category 3: Stress factors in the dental profession continued.

Sub theme 1.4: Situations in private practice.	For one of the respondents there were no situations in private dental practice that caused him to use alcohol to cope, he became alcohol dependent for different reasons.
Sub theme 1.5: Academic dentistry.	One respondent, who worked as a lecturers at a dental school reported that the dental academic world, e.g. developing dental curricula etc. caused him a lot of stress. This resulted in increased alcohol consumption as a coping mechanism.
Theme 2: Ways that the respondents utilized, previously, to relieve stress.	All 3 the respondents reported that they actually had other ways, excluding the use of alcohol, to cope with stress.
Sub theme 2.1: Work stress off.	One respondent worked his/ stress off. He kept himself busy and tried not to think about the stress linked to the profession.
Sub theme 2.2: Dental assistant.	A good dental assistant helped two respondents to reduce stress levels in the dental practice.
Sub theme 2.3: Drink to unwind.	Two respondents had one or two glasses of wine or a whisky (alcoholic drinks) in the evenings to unwind from the day's stress.
Sub theme: 2.4 Excessive drinking.	One respondent drank excessively in the evenings to unwind from the day's stress.

Table 3: Illustrated discussion of category 3: Stress factors in the dental profession continued.

Sub theme 2.5: Drinking in the quiet.	One respondent drank in the evenings, in the quiet, to unwind from the day's stress. He didn't want his family to know that he used alcohol to cope with the stress that originated from his occupation.
Sub theme: 2.6 Sport.	All 3 respondents did sport to relieve their stress.
Sub theme 2.7: Loneliness.	One respondent was lonely (single and not married) and visited places where alcohol was served to seek companionship, not to escape stress relating to his profession, but later on alcohol became a problem for him.
Theme 3: Ways that the respondents currently utilize to relieve stress.	One of the respondents changed his working environment. However, one respondent was retired and one was still in a rehabilitation centre.
Sub theme 3.1: Retirement.	The retired respondent experiences no more stress linked to the dental profession as such.
Sub theme 3.2: Not practising.	Not doing dentistry was a major stress factor for one respondent. Knowing that he could earn a living by practising his profession, but as a result of alcohol consumption could not practise dentistry anymore, created extreme stress because the respondent was financially broken.

Table 3: Illustrated discussion of category 3: Stress factors in the dental profession continued.

Sub theme 3.3: Inability to cope.	One respondent avoided situations in his profession that caused stress, especially the situations he knew that he would not cope with.
Theme 4: The need to have a drink.	All 3 respondents reported that they did not drink before performing a dental procedure.
Sub theme 4.1: Difficult dental procedures.	One respondent was stressed about performing certain procedures, but he did not use alcohol before a procedure; however, after the procedure he drank to unwind from the stress.
Sub theme 4.2: End of day.	All 3 respondents never used alcohol while performing dental procedures, even if they had a hangover. They suffered it through and then had a drink when their clinical dental work for the day was completed.
Sub theme 4.3: Stay away.	One respondent rather stayed away from his dental practices when he did not feel well as a result of alcohol abuse and tried to sleep his hangover off, rather than to take another drink in order to cope.
Sub theme 4.5: No drinking while practising.	One respondent never drank while he worked on patients because the stress linked to doing difficult dental procedures was not the cause for him becoming alcohol dependent.
Sub theme 4.6: Academic stress.	Other factors, not the stress of clinical dentistry, but factors such as academic related stress caused one respondent to use alcohol to cope.

Table 3: Illustrated discussion of category 3: Stress factors in the dental profession continued.

Theme 5: How alcohol enabled the respondents to cope.	Alcohol definitely helped the respondents to cope.
Sub theme 5.1: To unwind.	Alcohol helped some respondents to calm down and unwind from the day's procedures.
Sub theme 5.2: Coping mechanisms.	Alcohol helped one respondent to cope with his work as a dentists, however, this was only a temporary measurement. The next day all the worries and bad feelings were back again and the situation was even worse.
Sub theme 5.3: Academic dentistry.	Alcohol helped one respondent who was employed at a dental school to cope with the stress linked to the dental academic world.
Theme 6: The stage of the respondents' career they realized that their drinking habits had become a problem.	Alcohol dependency happened in different stages, and in different situations for the different respondents.
Sub theme 6.1: Post retirement.	During one respondent's career he did not realize that he had an alcohol dependency problem. It was only after retirement that he realized that there was a problem.
Sub theme 6.2: Type of employment.	One respondent, while working in a protected environment such as a government hospital was not alcohol dependent; however, once he entered into private practice, that had more occupational stress, he developed an alcohol dependency problem.
Sub theme 6.3: Stage of career.	One respondent developed an alcohol dependency problem in the advanced stage of his career.

Table 3: Illustrated discussion of category 3: Stress factors in the dental profession continued.

Theme 7: Dentistry as the cause of alcohol dependency.	One respondent linked his alcohol dependency to the stress of the dental profession. However, two of the respondents are of the opinion that although dentistry contributed to their alcohol dependency, but there are other outside factors that played a role.
Sub theme 7.1: Outside factors.	Practising dentistry as such, is not always the reason why some respondents became alcohol dependent. There were other outside factors, and should these respondents have had another profession it, is most likely that they would have became alcohol dependent.
Sub theme 7.2: Dental profession.	One alcohol dependent respondent linked his dependency directly to the stress and strain of his profession, and was of the opinion that he never would have become alcohol dependent if he was in another profession.
Sub theme 7.3: Stress in the profession.	All 3 respondents were of the opinion that dentistry is one of the most stressful professions and it definitely contributed to their alcohol dependency.
Sub theme 7.4: Quantity of alcohol use.	One of the respondents was of the opinion that many dentists use alcohol, some to a lesser degree, some a bit more, and some to an extreme degree. However, for whatever reasons dentists consume alcohol, only a small percentage become alcohol dependent.
Sub theme 7.5: Personality.	One alcohol dependent respondent was of the opinion that personality and other personal factors contributed to his alcohol dependency.

Because it is generally accepted that dentistry is a very stressful profession, a study was conducted in South-Australia to investigate stress levels and alcohol consumption among South-Australian dentists. This study revealed that dentistry is well recognized as a stressful profession, and that there are conflicting views of how such stress contributes to hazardous drinking among dentists. This study concluded that dentists suffer high levels of occupational stress, and that stress and hazardous alcohol drinking are present among South-Australian dentists to a significant extent. During this study, it was found that hazardous alcohol consumption among certain dentists, especially male dentists and dentists in rural areas, were up to four times higher than that of the average South-Australian population. However, this study revealed that existing personal vulnerability factors may be much stronger predictors for hazardous alcohol consumption (Winwood, Winefield and Lushington, 2003: 102-109).

Thomas, Randall and Carrigan (2003: 1937-43) reported a high rate of alcohol consumption among individuals with high trait anxiety, which can lead to alcohol dependency in vulnerable individuals.

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. As far back as 1984, O'Shea, Cora, and Ayer (1984: 48-51) reported that the physical strain of dental work is a great stressor amongst dentists**.**

6.3.4 Category 4: Quantity and frequency of alcohol use

When the respondents were asked if they ever used alcohol as dental students they responded as follows:

Respondent 1

Quote: "*As a dental student I only used alcohol on occasions such as intervarsity events etc. In other words, as a student I only used alcohol to socialize".*

Respondent 2

Quote: "*As a dental student I could not drink much because I did not have a lot of money. Maybe a couple of beers every Friday night, but not much. My alcohol problem definitely did not start as a student".*

Respondent 3

Quote: "*As a student I only used alcohol to socialize, and this was very seldom. I concentrated on my studies, now and then I went out with the boys for a couple of beers, but as I said, this did not happen very often. Remember before I studied dentistry I studied for other degrees, worked for a while and then studied dentistry. My dental studies were a priority and I very seldom socialized with alcohol".*

When the respondents were asked to reflect on their alcohol drinking habits prior to treatment for alcohol abuse, they responded as follows:

Respondent 1

Quote: "*Just prior to treatment I drank about a half of a bottle of whisky (Half Jack) per day".*

Respondent 2

Quote: "*At this stage I drank a bottle of Whisky per day. The drinking was not so much in the day but more at night".*

Respondent 3

Quote: "*Just prior to my first treatment for alcohol I only drank wine. I consumed about 3 bottles of wine per day".*

When the respondents were asked if their alcohol drinking habits ever been reported to the Health Profession's Council of South Africa (HPCSA), they responded as follows:

Respondent 1

Quote: "*No, it has never been reported to the HPCSA, in fact I work for the HPCSA as a consultant".*

Respondent 2

Quote: "*I don't think the HPCSA is aware of my drinking because they have never contacted me in connection with my alcohol drinking problem. However, they have removed my name from the registrar, but only because for the last 10 years I never paid my annual fees".*

Respondent 3

Quote: "*Yes, I was reported to the HPCSA. My departmental head reported me. He had no other choice".*

When the respondents were asked if they are currently using alcohol (all three respondents have had treatment for alcohol abuse), they responded as follows:

Respondent 1

Quote: "*After my rehabilitation I stopped drinking for two weeks and then had a relapse but then stopped out of my own will. I do not know how successful the treatment was but it is now something of the past".*

Respondent 2

Quote: "*Well I am still staying at a rehabilitation centre, but are not actually receiving any more treatment. For the last 10 years, while being here I did not use a drop of alcohol and I plan to keep it that way".*

Respondent 3

Quote: "*I discussed this matter with my therapist. She is of the opinion that once you have reached the stage of alcoholism you can never drink social again. I do not agree with her. I do not completely abstain from alcohol. When an opportunity arise I will have a glass of wine but I control it. My therapist is very unhappy about this, but I feel it is for my own best to play open cards with her. They say that there is not such a thing that a rehabilitated alcoholic can drink two glasses of wine and then stop. On weekends I still drink two glasses of wine. I still attend a support group once a week and the other day there was a man that sees himself as 8 years alcohol free, but he admits that he still has a glass of wine with his meals".*

When the respondents were asked to reflect on their alcohol usage to date they responded as follows:

Respondent 1

Quote: *"I drink now, well so to say about nothing. On my own I will not have a drink, but with my wife or during dinner meals, we will have a glass of wine, otherwise I don't use alcohol especially not on my own"*.

Respondent 2

Quote: *"As I said, for the past ten years I did not use any alcohol at all, and up to date I have not been using any alcohol. An alcoholic can never say that he will never drink again but my faith will help me not to drink again".*

Respondent 3

Quote: *"On weekends I usually have about two glasses of wine but only when an opportunity arises such as going out for a meal, or invited to a party etc. There is no alcohol in my house and I don't buy alcohol, but per occasion, with my friends, I will have a glass of wine".*

In Table 4 the quantity and frequency of alcohol use are discussed.

Table 4: Illustrated discussion of category 4: The quantity and frequency of alcohol use.

Themes and sub themes	**Discussion**
Theme 1: Alcohol consumption as dental students.	All 3 respondents only used alcohol at university as a means of socializing.
Sub theme 1.1: Socialization.	The respondents did not use alcohol to cope with demanding dental studies, they only used alcohol to socialize.
Sub theme 1.2: Contributing factors.	Alcohol dependency, for all three of these alcohol dependent dentists, did not start at dental school as a result of demanding dental studies. However, socializing with alcohol as a student could have been a contributing factor.
Theme 2: Alcohol drinking habits prior to treatment.	All 3 respondents used excessive amounts of alcohol prior to treatment that indicated that they were alcohol dependent.
Sub theme 2.1: Quantity of alcohol use.	The respondents drank alcohol in excessive amounts that indicated that they were addicted to alcohol. The quantity of alcohol used by all three of these respondents, prior to treatment, ranged from a half bottle of spirits to three bottles of wine per day.
Theme 3: Alcohol drinking at hazardous levels reported to the HPCSA.	Only one of the respondents with an alcohol drinking problem has been reported to the HPCSA because his supervisor had no choice but to report him.

Table 4: Illustrated discussion of category 4: The quantity and frequency of alcohol use continued.

Theme 4: Alcohol drinking habits after rehabilitation.	Two of the respondents did not stop drinking alcohol totally after rehabilitation.
Sub theme 4.1: Abstinence.	One alcohol dependent respondent abstained from alcohol in total after treatment for alcohol abuse. However 2 of the respondents claimed that they returned to social drinking.
Sub theme 4.2: Denial.	Two of the respondents believed that they could return to social drinking, and still had a drink on occasions after they received treatment for alcohol abuse.
Theme 5: Alcohol usage to date.	Two of the respondents did not stop their drinking in total after rehabilitation.
Sub theme 5.1: Denial.	Two of the respondents believed that they could restrict their alcohol use to certain occasions when it was in the company of other people.
Sub theme 5.2: Abstinence.	Even after a long period of sobriety one alcohol dependent respondent still abstained, in total, from alcohol intake.
Sub theme 5.3: Social drinking.	Two of the respondents believed that they could drink socially, within normal limits, on weekends after treatment for alcohol abuse.

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 (Newbury-Birch, Lowry and Kamali, 2002: 646-49).

The South African Food Based Dietary Guidelines on sensible drinking recommends not more than 2 standard drinks per day for women and 3 standard drinks per day for men (Alcohol and Drug Abuse Research…, [Sa]).

Very little substance dependency is reported,to councils, nationally or internationally. This phenomenon is called the "Conspiracy of Silence" that is unique to occupations (Lens and Van der Wal, 1997a: viii).

Meyer (1994: 165; cited in Doweiko, 1996: 50-51) states that what the research does suggest, is that it usually takes about ten years of heavy drinking before the typical person becomes dependent on alcohol. However, once a person does become dependent on alcohol, even if that person stops drinking for a period of time, he or she will again become dependent in a matter of days to weeks. Thus, once an individual becomes dependent on alcohol, it is unlikely that he or she can return to non-abusive drinking.

When a person does become dependent on alcohol, even if that person stops drinking for a period of time, he or she will again become dependent in a matter of days to weeks. Thus, once an individual becomes dependent on alcohol, it is unlikely that he or she can return to non-abusive drinking (Meyer, 1994: 165; cited in Doweiko, 1996: 50-51)

6.3.5 Category 5: Coping mechanisms

When the respondents were asked how they are currently earning a living, they responded as follows:

Respondent 1
Quote: *"No, I am retired and I live from my pension".*

Respondent 2

Quote: "*I am not practicing as a dentist anymore. I have been here at the rehab centre for the last 10 years or so, I am not receiving treatment anymore and I work as a driver for them. I am free to go out of the centre as I wish. On weekends I go to a club here nearby to watch television. It is mainly pensioners that go there and they usually drink, but I don't. They are very strict here at Wedge, on your return after an outing, you have to undergo a breathalyzer test for alcohol, and should you test positive they discharge you from the rehab centre immediately".*

Respondent 3

Quote: *"I still work at the dental school of the university but in another department. Because I don't use alcohol on a regular basis anymore, I changed my whole lifestyle. I am more often at home, but this is also a bit frustrating and sometime I am bored. I don't work with patients anymore, still in the dental profession, but more admin orientated. I also work only half of the day"*.

When the respondents were asked: What mechanisms do you currently apply to cope with the stress of the dental profession, they reported as follows:

Respondent 1

Quote: *''I am retired and have no more stress linked to the dental profession"*.

Respondent 2

Quote: "*As I said, I am currently not practicing as a dentist, have not for more than 10 years. But it stresses me knowing that I am a dentist and not practicing as one. Therefore I read a lot to get my mind off things. I read a lot of books and magazines on nature, and I love to complete cross word puzzles, it keeps my mind busy".*

Respondent 3

Quote: *"I make sure that I don't land up in stressful situations. I don't work with patients, I organise more. Clinical work was never a problem for me and it was not very stressful for me, but the academic curricula caused me a lot of stress and contributed to my drinking. Now I am out of that pure dental academic environment. I am more in a sort of managing post that is more stress free".*

When the respondents were asked: What other coping mechanisms did you apply in the past, apart from alcohol, to cope with the stress and strain of the dental profession, and whether these mechanisms were effective, they responded as follows:

Respondent 1

Quote: "*As I said, I worked my stress off, I tackled the stress and handled it. I was seriously involved with golf but after a game we used to go to the pub for a drink. It was effective to lower my stress levels but it also contributed to my drinking pattern".*

Respondent 2

Quote: *"My whole life long, I loved reading. Despite my drinking in the past, I loved reading and it also helped me to cope with the stress and strain of the dental profession".*

Respondent 3

Quote: *''I used to visit the theatre quiet often and tried to avoid being alone".*

In Table 5 coping mechanisms are discussed.

Table 5: Illustrated discussion of category 5: Coping mechanisms.

Themes and sub themes	**Discussion**
Theme 1: Current income (still practising as a dentist, or not).	One respondent could not get his life in proper perspective and remained in a rehabilitation centre. One respondent changed his working environment and one respondent retired from dentistry.
Sub theme 1.1: Retired dentist.	One of the respondents is retired and he lives from his pension.
Sub theme 1.2: Remained in a rehabilitation facility.	One respondent has remained in a rehabilitation centre and had not been doing dentistry for ten years.
Sub theme 1.3: Changed working environment.	One respondent was still in dentistry, but did not work on patients. He only worked half a day and did administrative dental work during that time.
Theme 2: Coping mechanisms currently applied.	Two of the respondents changed their working environment in order to cope.
Sub theme 2.1: Retirement.	One respondent was retired and he did not need any coping mechanisms to cope with the stress of the dental profession.
Sub theme 2.2: Reading.	One respondent was still in a rehabilitation centre (had been there for ten years) but it stressed him that he was not practising dentistry anymore, so he kept his mind busy by reading.
Sub theme: 2.3 Academic set-up.	One respondent reported that he concentrated on managing rather than to be in the pure academic set-up that made him drink in the first place.

Table 5: Illustrated discussion of category 5: Coping mechanisms continued.

Theme 3: Other coping mechanisms applied in the past, apart from alcohol.	These respondents reported that they did a lot of reading, exercise and sport.
Sub theme 3.1: Coping before treatment.	One alcohol dependent respondent worked his stress off, but after hours used alcohol to unwind and this contributed towards his alcohol dependency.
Sub theme 3.2: Other coping mechanisms used in the past.	One respondent did a lot of reading, one visited the theatre and this helped them to cope with the stress of the dental profession.

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.

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.

6.3.6 Category 6: Recommendations

Finally the researcher requested the respondents of the qualitative phase of this research to make recommendations concerning the following:

- What can be built into the dental curriculum to address issues of stress and strain of the dental profession?

- To make recommendations for dentists to cope with dental stress.

These recommendations were used to reinforce the recommendations made by the respondents in the quantitative phase.

Theme 1: Dental curricula and stress of the dental profession.

To the question: What can be built into the dental curriculum to address issues of stress and strain of the dental profession?, the respondents reported as follows:

Respondent 1

Quote: *"I think many things can be built into the dental curriculum. Being a consultant for the HPCSA I see a need for more training in dental ethics. There is also a lack in socializing skills. A dentist must not only attend work and return home. He should become a member of society, socialize with society and join different organizations such as to be active in his church, in a sport club, in a body corporate etc. Dentists must learn how to socialize, by that I don't mean that they must use alcohol to socialize, alcohol is not needed to socialize. Dental students must learn that when they socialize they get bigger exposure to the public and this can also mean a lot for their practices, more patients and more money. I have told many young dentists that if they don't socialize and only rotate between work and home they will eventually get tired of their work, their homes and even their wife's. So, what will they do then?, they will drink. All of this has to be made clear to dental students at dental schools".*

Respondent 2

Quote: *"Yes, this is a difficult question. Point number one, don't seek alternatives such as alcohol or medications to cope with stress related to the profession".*

Respondent 3

Quote: *"A short coming in the dental curriculum, that should be built into the curriculum, is the fact that students do not see dental patients as humans, they see a patient as a mouth with teeth in it. Psychology on patient management*

should be stressed. Dental students must learn to respect the feelings of a patient".

Table 6.1 reflects recommendations made by the respondents concerning dental curricula at universities.

Table 6.1: Illustrated discussion: Category 6 theme 1: Dental curricula and stress of the dental profession.

Themes and sub themes	**Discussion**
Theme 1: Dental curricula and stress of the dental profession.	All 3 respondents are of the opinion that dental students do not receive enough training concerning the stress of the dental profession and how to cope with it
Sub theme 1.1: Socializing.	Dental students must be taught how to socialize in a healthy manner. This will also promote their practices.
Sub theme 1.2: Ethics	Dental students must receive more advanced courses in dental ethics.
Sub theme 1.3: Alternative coping mechanisms.	Dental students must be taught not to seek alternative coping mechanisms, such as the use of alcohol or drugs to cope.
Sub theme 1.4: Dental patients are humans.	Teach dental students to treat patients holistically because they are humans.

Theme 2: Coping with stress.

Recommendations made by the respondents of the qualitative phase for dentists to cope with dental stress:

Respondent 1

Quote: *"As I said, socialize, not necessary with alcohol, there are many healthy ways"*.

Respondent 2

Quote: *"Try to calm yourself in difficult situations by making your practice environment as comfortable as possible. Take your time in doing things. Plan your available time carefully, dentists usually try to do as much as possible in the shortest time, they squeeze patients in for financial reasons. More patients means more money. This is understandable because there are bills to be paid, which is a stressor on its own. So what do you do? You create additional stress by seeing more patients than what you can manage, to earn more money to enable you to pay your debts. I personally feel that you must distribute your patient load in such a way that it is easily manageable. Financially, this is not as rewarding, but it will definitely reduce your stress levels, and then you will not have the need to seek alternatives such as alcohol or what ever"*.

Respondent 3

Quote: *Well, dentists must follow all the recipes of stress management. Financial pressure in the sense of overspending creates a lot of stress. Don't overload yourself with work, create time for yourself and your family.*

Table 6.2 illustrates recommendations for coping with stress related to the dental profession.

Table 6.2: Illustrated discussion: Category 6 theme 2: Coping with stress.

Themes and sub themes	**Discussion**
Theme 2: Coping with stress.	All the respondents agreed that a dentist should follow healthy coping mechanisms.
Sub theme 2.2: Socializing.	Dentists must socialize more, not necessarily with alcohol.
Sub theme 2.3: Practice environment.	The dentist must have a comfortable practice environment, plan his available time and don't overbook himself with patients for the sake of money.
Sub theme 2.4: Stress management.	Dentists must follow all the strategies for healthy stress management.

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, because chemical dependency can be prevented if it is recognized early enough.

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.

6.4 Summary of the qualitative phase of the study

The researcher derived categories, themes and sub themes while analyzing the semi-structured interviews he had with three respondents that had had treatment for alcohol dependency.

6.4.1 Category 1: History of alcohol dependency and treatment of alcohol dependency

Theme 1: Start of alcohol dependency and what caused it.

Alcohol dependency for each of the three respondents basically started by socializing with alcohol, first at university and then later on as dentists.

Sub theme 1.1: Socializing events during the respondents' university career contributed to their alcohol dependency.

Sub theme 1.2: The multiple drug treatment programme is longer and more intensive, than the treatment program for alcohol use only. Therefore one respondents was reluctant to admit that he also used other drugs simultaneously with alcohol.

Sub theme 1.3: For all 3 alcoholic respondents more than one treatment were required.

Sub theme 1.4: Family, spouses and other caring people convinced two of these respondents to go for treatment.

Sub theme 1.5 : The direct family of one of the respondents separated from him because of his drinking.

Sub theme 1.6: The practice of one of the respondents was financially unstable.

Sub theme 1.7: One respondent felt too superior to go for treatment, and did not complete the treatment course and discharged himself from the treatment facility. This resulted in his being admitted for a second or even a third time.

Sub theme 1.8: All three of the respondents believed that the treatment for alcohol dependency is unsuccessful and it is a waste of time to go for treatment.

Sub theme 1.9: One respondent literally drank his practice into the ground and eventually had to close the doors.

Sub theme 1.10: One respondent, who refused treatment, started to roam about and eventually landed up in a rehabilitation centre because he had nowhere else to go.

Sub theme 1.11: For one respondent not even long term rehabilitation programmes were sufficient.

Sub theme 1.12: One respondent voluntary went for alcohol treatment because he was scared of losing his job, or being reported to the Health Professions Council.

Sub theme 1.13: One respondent with an alcohol dependency problem was forced by the Health Professions Council to go for treatment.

Sub theme 1.14: One respondent also used other substances such as tranquilizers with the alcohol.

Sub theme 1.15: Two of the respondents, despite serious financial problems, family problems and occupational problems as a result of alcohol abuse, did not believe that they were alcohol dependent and claimed that they could go back to social drinking after rehabilitation.

Category 2: Background information of the families who raised the respondents

Theme 1: Family history and stability.
All three respondents came from stable and happy families.

Sub theme 1.1: All three the respondents came from a very happy family which did not contribute to their alcohol dependency.

Sub theme 1.2: All the respondents came from stable families that did not contribute to their alcohol dependency.

Theme 2: All the respondents had a very good relationship with their parents with whom they grew up.

Sub theme 2.1: The respondents had a good relationship with their parent(s) / guardian(s) with whom they grew up and this relationship did not contribute to their alcohol dependency.

Theme 3: Alcohol drinking habits of the respondents' parent(s) / guardian(s).
None of the respondents reported an alcohol dependency problem among their parents. Thus the genetic theory of substance dependency was not applicable in this study.

Sub theme 3.1: The parent(s) / guardian(s) of the respondents did not have an alcohol problem.

Theme 4: Prescription drugs or street drugs used by the respondents' parent(s) / guardian(s).
None of the respondents' parents used prescription drugs or street drugs.

Sub theme 4.1: The respondents' parent(s) / guardian(s) did not use any prescription drugs or street drugs on a regular basis except for therapeutic reasons. Thus it could not have been a contributing factor to the respondents' alcohol dependency.

Theme 5: Financial position of the respondents guardians with whom they grew up.

Sub theme 5.1: All of the respondents that participated in the qualitative phase of this study were, as children, not wealthy but definitely not poverty stricken.

Theme 6: Prescription or street drugs used on a regular basis by the respondents.

Sub theme 6.1: Multi-drug use - One of the respondents used one of the benzodiazepines, an anxiolytic drug, simultaneously with alcohol.

Category 3: Stress factors in the dental profession

Theme 1 : Causes of stress in the dental profession.
Dental issues and working as a dentist caused the respondents some stress, but not extreme stress. However, one respondent reported that dentistry caused him extreme stress.

Sub theme 1.1: One of the respondent's stress originated from punctuality.

Sub theme 1.2: Difficult patients with high expectations and difficult dental procedures caused one of the respondents stress and this contributed to his drinking above the norm.

Sub theme 1.3: For one of the respondents there were no situations in private dental practice that caused him to use alcohol to cope, he became alcohol dependent for different reasons.

Sub theme 1.4: One respondent, who worked as a lecturers at a dental school reported that the dental academic world, e.g. developing dental curricula etc. caused him a lot of stress. This caused him to drink a lot.

Theme 2: All three the respondents reported that they actually had other ways, excluding the use of alcohol, to cope with stress.

Sub theme 2.1: One respondent worked his stress off. He kept himself busy and tried not to think about the stress linked to the profession.

Sub theme 2.2: A good dental assistant helped two respondents to reduce stress levels in the dental practice.

Sub theme 2.3: Two respondents had one or two glasses of wine or a whisky (alcoholic drinks) in the evenings to unwind from the day's stress.

Sub theme: 2.4 One respondent drank excessively in the evenings to unwind from the day's stress.

Sub theme 2.5: One respondent drank in the evenings, in the quiet, to unwind from the day's stress.

Sub theme: 2.6 All three respondents did sport to relieve their stress.

Sub theme 2.7: One respondent was lonely (single and not married) and visited places where alcohol was served to seek companionship.

Theme 3: Ways that the respondents currently utilize to relieve stress.

One of the respondents changed his working environment. However, one respondent was retired and one was still in a rehabilitation centre.

Sub theme 3.1: The retired respondent experiences no more stress linked to the dental profession as such.

Sub theme 3.2: Not doing dentistry was a major stress factor for one respondent. Knowing that he could earn a living by practising his profession.

Sub theme 3.3: One respondent avoided situations in his profession that caused stress.

Theme 4: The need to have a drink.

All 3 respondents reported that they did not drink before performing a dental procedure.

Sub theme 4.1: One respondent was stressed about performing certain procedures, but he did not use alcohol before a procedure; however, after the procedure he drank to unwind from the stress.

Sub theme 4.2: All three respondents never used alcohol while performing dental procedures, even if they had a hangover.

Sub theme 4.3: One respondent rather stayed away from his dental practices when he did not feel well as a result of alcohol abuse.

Sub theme 4.4: One respondent never drank while he worked on patients because the stress linked to doing difficult dental procedures was not the cause for him becoming alcohol dependent.

Sub theme 4.5: Other factors, not the stress of clinical dentistry, but factors such as academic related stress caused one respondent to use alcohol to cope.

Theme 5: Coping with alcohol: Alcohol definitely helped the respondents to cope.

Sub theme 5.1: Alcohol helped some respondents to calm down and unwind from the day's procedures.

Sub theme 5.2: Alcohol helped one respondent to cope with his work as a dentists, however, this was only a temporary measurement.

Sub theme 5.3: Alcohol helped one respondent who was employed at a dental school to cope with the stress linked to the dental academic world.

Theme 6: The stage of the respondents' career they realized that their drinking habits had become a problem.

Sub theme 6.1: During one respondent's career he did not realize that he had an alcohol dependency problem. It was only after retirement that he realized that there was a problem.

Sub theme 6.2: One respondent, while working in a protected environment such as a government hospital was not alcohol dependent; however, once he entered into private practice, that had more occupational stress, he developed an alcohol dependency problem.

Sub theme 6.3: One respondent developed an alcohol dependency problem in the advanced stage of his career.

Category 4: The quantity and frequency of alcohol use

Theme 1: Alcohol consumption as dental students.

Sub theme 1.1: The respondents did not use alcohol to cope with demanding dental studies, they only used alcohol to socialize.

Sub theme 1.2: Alcohol dependency, for these respondents did not start at dental school as a result of demanding dental studies. However, socializing with alcohol as a student could have been a contributing factor.

Theme 2: Alcohol drinking habits prior to treatment.

Sub theme 2.1: Quantity - The respondents drank alcohol in excessive amounts that indicated that they were addicted to alcohol. The quantity of alcohol used by all three of these respondents, prior to treatment, ranged from a half bottle of spirits to three bottles of wine per day.

Theme 3: Alcohol drinking at hazardous levels reported to the HPCSA.
Only one of the respondents with an alcohol drinking problem has been reported to the HPCSA because his supervisor had no choice but to report him.

Theme 4: Alcohol drinking habits after rehabilitation.
Two of the respondents did not stop drinking alcohol totally after rehabilitation.

Sub theme 4.1: One respondent abstained from alcohol in total after treatment for alcohol abuse. However two of the respondents claimed that they returned to social drinking.

Sub theme 4.2: Two of the respondents believed that they could return to social drinking, and still had a drink on occasions after they received treatment for alcohol abuse.

Theme 5: Alcohol usage to date.

Sub theme 5.1: Denial - Two of the respondents believed that they could restrict their alcohol use to certain occasions when it was in the company of other people.

Sub theme 5.2: Even after a long period of sobriety one alcohol dependent respondent still abstained, in total, from alcohol intake.

Sub theme 5.3: Two of the respondents believed that they could drink socially, within normal limits, on weekends after treatment for alcohol abuse.

Category 5: Coping mechanisms

Theme 1: Current income (still practising as a dentist, or not).
One respondent could not get his life in proper perspective and remained in a rehabilitation centre. One respondent changed his working environment and one respondent retired from dentistry.

Theme 2: Two of the respondents changed their working environment in order to cope.

Sub theme 2.1: One respondent was retired and he did not need any coping mechanisms to cope with the stress of the dental profession.

Sub theme 2.2: One respondent was still in a rehabilitation centre (had been there for ten years) but it stressed him that he was not practising dentistry anymore, so he kept his mind busy by reading.

Sub theme: One respondent reported that he concentrated on managing rather than to be in the pure academic set-up that made him drink in the first place.

Theme 3: These respondents reported that they did a lot of reading, exercise and sport, apart from alcohol use to cope with stress.

Sub theme 3.1: Before treatment, one respondent worked his stress off, but after hours used alcohol to unwind and this contributed towards his alcohol dependency.

Sub theme 3.2: Other coping mechanisms used in the past - One respondent did a lot of reading, one visited the theatre and this helped them to cope with the stress of the dental profession.

Category 6: Recommendations

Theme 1: Dental curricula and stress of the dental profession.
All 3 respondents are of the opinion that dental students do not receive enough training concerning the stress of the dental profession and how to cope with it.

Sub theme 1.1: Dental students must be taught how to socialize in a healthy manner. This will also promote their practices.

Sub theme 1.2: Dental students must receive more advanced courses in dental ethics.

Sub theme 1.3: Dental students must be taught not to seek alternative coping mechanisms, such as the use of alcohol or drugs to cope.

Sub theme 1.4: Dental students must be taught how to treat patients holistically because they are humans.

Theme 2: Coping with stress.

All the respondents agreed that a dentist should follow healthy coping mechanisms.

Sub theme 2.2: Dentists must socialize more, not necessarily with alcohol.

Sub theme 2.3: The dentist must have a comfortable practice environment, plan his available time and don't overbook himself with patients for the sake of money.

Sub theme 2.4: Dentists must follow all the strategies for healthy stress management.

It must be kept in mind that the findings of the qualitative phase of this study cannot be generalized to the rest of the South African dental population. Although this qualitative study was in-depth, it involved only a small number of respondents in order to gain insight in the live-world of an alcohol dependent dentist. This phase of the study succeeded in providing this. The information gained in the qualitative phase of this study was used to reinforce the findings of the quantitative phase of this study.

CHAPTER 7

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

7.1 Introduction

The purpose of this chapter is firstly to summarize the content of the preceding thesis and secondly to provide conclusions and recommendations derived from the findings of the research for this thesis. The overall goal of this study as well as each objective, and the research question will be addressed.

As mentioned earlier, it is well known that dentistry is a very stressful profession and the researcher is of the opinion that some dentists consume alcohol to cope with the stress and strain of the dental profession. This way of coping may lead to adverse effects and alcohol dependency, even if it is only in very small percentages.

The findings of the quantitative phase, supported by the qualitative phase of this study, demonstrate that South African dentists do experience high levels of occupational stress and that dentists have ways to cope with this stress. South African dentists consume alcohol for a variety of reasons, of which socializing with alcohol is the most significant. This research demonstrates that when alcohol consumption of male dentists was compared with alcohol consumption of female dentists there was no statistically significant difference. However, this research demonstrates that a significant number of South African dentists (male and female) consume alcohol above the sensible limit of alcohol intake which the South African Food Based Dietary Guidelines on sensible drinking, consider to be no more than 2 standard drinks per day for women and 3 standard drinks per day for men. The quantitative phase of this study also demonstrates that there are South African dentists that actually use alcohol to cope with the stress of the dental profession, and the qualitative phase demonstrates that some of these

dentists have become dependent on alcohol. This study indicates that alcohol adverse effects are present, and that there are South African dentists who have experienced alcohol related problems However, in the quantitative phase this was reported in very small percentages. The qualitative phase probed more in-depth into alcohol related problems, among South African dentists, and revealed that there are South African dentists who have experienced major problems as a result of alcohol use.

7.2 Summary of the research methodology

The specific goal for this study was to explore alcohol consumption related to occupational stress and anxiety among South African dentists, and to identify alcohol related problems as a result of this way of coping.

Table 1 illustrates the research process followed in this study.

Table 1: The research process followed in this study.

Type of research: Applied		
Approach: Cresswell's dominant less dominant (triangulation) approach		
	Quantitative (dominant)	**Qualitative (less dominant)**
Design	Descriptive (survey) design	Collective case study
Respondents	Dentists practising in the Tshwane (Pretotia), Krugersdorp and Johannesburg metropolitan areas	Dentists that had treatment for alcohol dependency or who were self characterized as heavy alcohol users
Data collection	Questionnaires	Semi-structured interviews
Sampling	Probability	Non-probability
Sampling technique	Simple random sampling	Purposive sampling
Data analysis technique	Frequencies / percentages in table and figure form	Transcribed interviews with quotes, categories, themes, and sub themes

7.2.1 The selection of a researchable topic

The researcher is of the opinion that the specific research was not only researchable but also necessary because of his findings in the literature search. The only study related to the topic in South Africa, that the researcher could find, was a study conducted in 1996 in the Department of Psychology at the University of Stellenbosch which investigated stress and coping with stress among South African dentists. A substantial amount of research regarding stress and alcohol consumption, among dentists, is internationally available. However, Kenna and Wood (2004: 107-16) supported the findings of Hanks and Bissel in 1991, that little meaningful data are available on alcohol consumption among dentists in general, and they found that prevalence studies of substance use and abuse rarely included dentists.

7.2.2 Goal of the research

The researcher defines the goal of this study as follows: “To explore alcohol consumption related to occupational stress and anxiety among South African dentists, and to identify adverse effects as a result of this way of coping with occupational stress (Compiling a general profile on alcohol consumption among South African dentists).

7.2.3 Objectives

The researcher identified the following objectives for this study.

Objective 1: To explore occupational stress and anxiety among South African dentists and measures they take to cope with occupational stress and anxiety.

This objective was addressed by means of a literature study in chapter 3. Knowledge was gained from the literature study regarding occupational stress

and anxiety among South African dentists and measures they take to cope with occupational stress. This chapter discussed stress, burnout and factors that cause burnout, factors in the dental profession that cause occupational stress, such as economic stressors, practice management and stress, job satisfaction and stress, dental procedures and stress, overall stress., age and stress, working environment and stress, personality (individual aspects) and stress, general health and stress, and management of stress.

This objective was also partly met by exploring these factors in both the quantitative and qualitative phases of the study.

Objective 2: To explore alcohol consumption and alcohol-related problems among South African dentists.

This objective was achieved in the quantitative and qualitative phases of this study. A literature review was done on alcohol consumption and alcohol related problems among dentists. In chapter 2 the following were discussed : the many facets of alcohol use, abuse and dependency in general, not only as it relates to a dentist, as well as models, theories and classifications of addiction. In chapter 4 alcohol consumption and alcohol related problems among dentists were explored and the researcher found that not much literature is available on this topic among South African dentists.

The criteria used to measure alcohol consumption among the respondents in the quantitative study 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 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), and whether they consider themselves as a non-

drinker, a light-social drinker, a heavy-social drinker, a problematic drinker or an alcohol dependent. Reasons why the respondents consume alcohol and adverse affects of alcohol use were addressed. Rich data with regard to alcohol consumption and alcohol-related problems among South African dentists were acquired in the qualitative study.

Objective 3: To explore among South African dentists alcohol use, abuse, and dependency related to occupational stress and anxiety.

The researcher did an in-depth literature search and addressed alcohol use, abuse and dependency related to occupational stress and anxiety among dentists (chapter 2 and chapter 4). In chapter 2 the researcher addresses literature on etiological factors relating to alcoholism, behavioural, psychological, and physical effects of alcohol use or abuse, as well as alcohol related disabilities linked to nutritional and pharmacological aspects of alcohol use. In chapter 4, the researcher addresses literature on alcohol consumption among dentists and alcohol related problems among dentists. The quantitative and qualitative phase of this study investigated this phenomenon among South African dentists. The qualitative phase indicated that alcohol use, among dentists, to relieve occupational stress may lead to alcohol dependency.

Objective 4: To compile a profile on alcohol consumption among South African dentists.

The purpose of the above mentioned objective was to enable the researcher to compile a profile on alcohol consumption among South African dentists. The researcher provided this in the quantitative and qualitative phases of the study. In the quantitative phase probability sampling showed general findings of dentists representative of the Gauteng province of South Africa. In the qualitative phase non-probability sampling showed the live-world of an alcohol dependent dentist. The researcher did not compile a specific profile, but sees this whole thesis as

the profile on alcohol consumption among South African dentists linked to the stress of the dental profession.

Objective 5: To make recommendations for dealing with alcohol dependency amongst dentists.

The recommendations made by the respondents in the quantitative, as well as the qualitative studies, were presented in order to help with the prevention and treatment of alcohol dependency among dentists. Later on in this chapter, the researcher makes specific recommendations.

7.2.4 Research questions

The researcher is of the opinion that some South African dentists, even if it is in small numbers, consume alcohol to relieve the stress and strain as a result of their profession. In this study, the researcher sought to answer the following questions:

Question 1: What factors in the dental profession cause occupational stress and anxiety in South African dentists?

The researcher desired answers to this question because the in-depth literature search revealed that there are many stress factors among dentists. The quantitative phase of this study revealed that South African dentists experience high stress levels which include more intense, and less intense stressors. The more intense stressors were: 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 were: 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. The researcher also found that there was 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 qualitative study reinforced the quantitative findings because the respondents, who had undergone treatment for alcohol dependency experienced anxiety and high levels of occupational stress, such as time schedules, patients with high expectations, and difficult patients. The qualitative study also indicated that even the academic world, being a lecturer at a dental school, can be extremely stressful. These stressors contributed to their alcohol consumption, which resulted in alcohol dependency.

Question 2: What measures do South African dentists apply to cope with occupational stress and anxiety?

The researcher desired answers to this question because the literature search revealed that dentists utilize a variety of ways to cope with the stress derived from their occupation. However, the literature also revealed that some dentists do nothing to cope with occupational stress and some dentists use alcohol as a coping mechanism, that could result in adverse affects, as a result of this way of coping. From the quantitative study, the researcher came to the conclusion that some South African dentists consume alcohol as a stress relieving mechanism and there is a small percentage of South African dentists that have encountered problems as a result of this. In this study, it was found that the majority (70.13%) of the respondents do physical exercise to reduce their stress levels. Other stress relieving methods that were reported are, music, movies / Videos / DVD, socializing with friends, smoking, emotional outbursts, hobbies, and undergoing

counseling as a way of stress relief. However, 16.88% of the dentists reported that they actually use alcohol to reduce their stress levels.

The qualitative phase of this study reinforced the quantitative phase concerning coping mechanisms. One alcoholic respondent returned to dentistry after rehabilitation, but changed his/her working conditions, in order to cope, due to the stress related to the dental profession.

Question 3: To what extent do South African dentists consume alcohol to cope with occupational stress and anxiety?

The researcher desired answers to this question because he is of the opinion that some South African dentists use alcohol to cope with the stress of their profession. The literature confirms this, and the quantitative and qualitative findings of this study indicated that there are South African dentists who consume alcohol as a stress relieving mechanism. However, in the quantitative phase of this study, this phenomenon was reported in small quantities.

In the quantitative phase of this study, it was found that 32.47% of the respondents are heavy episodic alcohol users and 12.99% are heavy alcohol users. What is concerning is that 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. Also concerning is that 20.78% of the respondents drink 3-4 drinks on a weekend day and 9 (11.68%) drink 5-11 drinks on a weekend drinking day that is above the sensible limit of drinking. 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.

The majority of the respondents in this sample of South African dentists consider themselves as non-drinkers (27.27%) and light-social drinkers (61.04%).

However, none see themselves as a problematic drinker and 1.3% see 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).

The low stressed dentists were categorized as those who reported 0-4 areas of stress and 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). 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. However, a significant number of the respondents actually used alcohol as a coping mechanism.

One respondent of the qualitative phase of this study, indicated that alcohol use to relieve the stress derived from the dental profession, contributed to his/her alcohol dependency.

Question 4: To what extent has alcohol consumption caused alcohol-related problems among South African dentists?

The researcher desired answers to this question because he is of the opinion that, as for the general population, alcohol use in excessive quantities may lead to adverse effects. Dentists who use alcohol, for what ever reason, can also encounter alcohol related problems, and the literature confirmed this. The quantitative phase of this study concluded that a small number of the respondents encountered alcohol related problems. However, the qualitative phase clearly indicated that one respondent actually became alcohol dependent

because he/she used alcohol to cope with the stress and strain of his/her profession.

The quantitative phase of this study indicated that the majority of the respondents (67.53%) reported that the use of alcohol has not affected their work as a dentist in any way. However, small percentages (<5%) of the respondents reported that alcohol use has affected their work as a dentist as follows: getting behind in work due to alcohol consumption, calling 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.

Small percentages (<11%) reported that: they worry at times that they may be using too much alcohol or too often, have shown bad behaviour due to alcohol use, neglect to do daily routine tasks, such as shopping due to alcohol use and neglect their personal appearance (clothing, shaving etc) due to alcohol use. What is interesting is that 6.49% of the respondents were even 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 had seriously considered suicide because of their alcohol drinking habit..

In this study, it was found that alcohol did not have a significant influence on the functioning in the respondents' personal lives in respect of relationships with their family, marriage, sex life, social life, sport, religion, and finances. However, small percentages (<10%) reported that alcohol use has affected their personal lives somehow.

None of the respondents reported that they have been diagnosed with alcohol related diseases. 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. Only a very small percentage (1.30%) 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 had been admitted to a rehabilitation facility for alcohol abuse.

From the qualitative phase of this study, it is clear that the respondents experienced major problems as a result of their alcohol abuse. Although some of the respondents of the qualitative phase of this study did not necessarily use alcohol to relieve the stress of the dental profession, the consequences for the respondents were basically the same. They all became alcohol dependent and had to receive treatment for alcohol dependency.

Question 5: 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?

The researcher desired answers to this question because his main objective with this study was to compile a general profile on alcohol consumption, among South African dentists, linked to the stress and strain of the dental profession. (This study represents the profile). The recommendations made by the respondents in the quantitative as well as the qualitative phases of the study can be taken into consideration when developing new intervention models and refining existing intervention models for treatment and rehabilitation of dentists addicted to alcohol, or when the indications are there that a dentist is developing alcohol dependency problems. In this chapter recommendations of what should be incorporated into the dental curricula at dental schools, and stress relieving mechanisms were made.

7.3 Planning phase

The research methodology was finalized and the research proposal was submitted and approved by the Research Proposal and Ethics Committee of the Faculty of Humanities, University of Pretoria.

The researcher conducted a literature study as part of his objectives, in order to assess the research findings against the background of existing literature. He utilized a variety of sources, including scientific books, articles, the internet, HPCSA guidelines and reports. This literature study was very meaningful and confirmed the need for more knowledge on alcohol consumption among South African dentists, linked to the stress and strain of their profession, and the adverse effects of this way of coping.

The researcher made use of the quantitative-descriptive survey design for the dominant quantitative approach and the qualitative collective case study for the less dominant qualitative approach.

For the quantitative data collection, the researcher used a questionnaire. By utilizing this design a large percentage of respondents could be involved and a large number of facts could be explored. For the qualitative data collection, the researcher utilized a semi-structured interview schedule to obtain more in-depth data concerning the subject with a small group of respondents. The researcher obtained the necessary informed consent in both the quantitative and qualitative studies.

The sampling technique proved to be appropriate. For the quantitative study the researcher originally planned a probability sample of dentists practising in the Tshwane (Pretoria) metropolitan area of the Gauteng province of South Africa, but later extended it to the geographical area of the Krugersdorp and Johannesburg metropolitan areas of the Gauteng province, due to a lack of

response. For the qualitative study, the researcher purposively selected five dentists (respondents), who had treatment for alcohol abuse, or who were self-characterized as heavy alcohol users. Unfortunately two of the respondents of the qualitative study died before they could be interviewed. Due to ethical reasons and the sensitivity of the topic, no other respondents could be found.

7.4 Implementation phase

The quantitative part of the study was implemented during July – September 2007. One hundred and ten (110) questionnaires were hand delivered to dentists practising in the Tshwane (Pretoria), and later extended to the Krugersdorp and Johannesburg metropolitan areas with a response rate of 70%. The interviews for the qualitative study were done during November 2007 at a place that was suitable for the respondents.

7.5 Interpretation phase

The quantitative data were collected by means of questionnaires, and were presented and interpreted by means of frequencies and percentages (descriptive statistics). The data processing and statistical analysis was done by the Department of Statistics, University of Pretoria. The more significant data are represented by means of tables and graphs. The questionnaire consisted of questions that explored the biographical and background information of the respondents. The questionnaire also explored stress, coping with stress, history of alcohol use/abuse and dysfunction as a result of alcohol use/abuse among these respondents. Finally, a section that explored the perception of dentists on alcohol use, linked to the stress and strain of the dental profession, was explored.

The qualitative data analysis was done according to the data analysis procedure as described by Cresswell (1994: 153) where he says that the process of qualitative data analysis is “eclectic,” in other words, there is no right way.

Interviews were tape-recorded and then later transcribed according to categories that were divided into themes. The researcher presented data in text and tabular form and verbatim quotes from the interviews to support the findings and then verified these with the literature.

7.6 Conclusions

The following conclusions regarding stress factors in the dental profession linked to alcohol consumption as a stress relieving mechanism, and the adverse effects of this way of coping, are drawn from the literature study and the quantitative and qualitative empirical findings.

7.6.1 Dentistry as a stressful profession

The literature suggests that dentists experience high levels of occupational stress and this stress already starts at dental school. From this study (quantitative and qualitative phases), it is clear that there are factors in the dental profession that cause South African dentists stress, and this stress already starts at dental school during their dental training. Stress factors, as a dental student, among this group of South African dentists included demanding dental studies, depression / mood disorder as a result of dental studies, overall stress related to the field of study (dentistry), long working and study hours, and emotional experiences related to dental training.

From this study, 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 the work of dental technologists not being on time or up to standard. From the qualitative phase, it was clear that the respondents, who have had treatment for alcohol dependency, experienced anxiety and high levels of occupational stress due to time schedules, patients with high expectations, and difficult patients.

The researcher found that there was no significant 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 academia, thus the type of employment did not contribute to the stress levels of dentists.

The qualitative study indicated that occupational stress was one of the reasons why some of the respondents became alcohol dependent. Thus, from this study it was found that dentistry is a stressful profession.

7.6.2 Stress relieving methods used by dentists

The literature study revealed that there are a variety of ways that dentists utilize to relieve stress resulting from their profession. However, the literature also suggests that some dentists use unhealthy ways, such as the use of alcohol to relieve their stress. In this study, it was found that the majority of the respondents do use positive or healthy ways of relieving stress levels, such as physical exercise to reduce their stress levels, socializing with friends and practised hobbies 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, a significant number of the dentists reported that they actually use unhealthy ways, such as alcohol to reduce their stress levels. Other stress relieving methods that were reported were: eating, listening to music, watching movies, videos and DVD's, smoking, and emotional outbursts. A very small percentage of the respondents reported that they use other chemical substances, receive counseling, talk to family and friends about stress, hunting, fishing and shooting competitions, read books / magazines, having sex, video games, over-exercise, visiting the theatre and art galleries, shopping, sleeping, relax with family (family outings), gardening, regular holidays, and religion to relieve their stress levels.

Thus, from this study, the majority of measures to relieve stress were healthy ways, and a minority admitted to practising unhealthy ways.

7.6.3 Quantity and frequency of alcohol consumption

From the literature it was found that dentists consume more alcohol than other health care workers. However, the literature study also made it clear that when compared to the general population health care workers consume less alcohol.

The quantitative phase indicated that a minority of the respondents 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. Also of concern is that 20.78% of the respondents drink 3-4 drink on a weekend day and nine (11.68%) drink 5-11 drinks on a weekend drinking day, which is above the sensible limit of drinking.

From the qualitative phase of this study, it is clear that the respondents who had treatment for alcohol dependency consumed huge amounts of alcohol prior to treatment.

7.6.4 Adverse effects of alcohol consumption

The literature search revealed major and minor dysfunctions as a result of alcohol use amongst dentists, and that alcohol related problems among dentists have been reported significantly.

The quantitative phase of this study revealed that the majority of the respondents reported that the use of alcohol had not affected their work as a dentist in any way. However, small percentages (less than 3%) of the respondents reported that alcohol use had affected their work as a dentist as follows: get behind in work due to alcohol consumption, call in sick or late due to alcohol consumption, can't 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.

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, neglecting to do daily routine tasks, such as shopping, and neglecting their personal appearance (e.g. clothing and shaving) due to alcohol use. What is interesting is that a small number of the respondents were involved in a motor car accident due to their alcohol consumption, and that a small percentage have been convicted in a court of law for something that they did under the influence of alcohol.

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. However, small percentages (less than 10%) reported that alcohol did have an influence on these aspects of relationships.

None of the respondents reported that they have been diagnosed with alcohol related diseases. Only one respondent has seen a psychiatrist, psychologist,

counselor or social worker due to psychosocial problems resulting from alcohol consumption, and only one respondent 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, a very small percentage of the respondents reported that they have been advised to stop their alcohol drinking habits because it is affecting their health.

From the qualitative phase of this study, it is clear that the respondents experienced major problems as a result of their alcohol abuse. Although some of the dentists of the qualitative phase of this study did not necessarily use alcohol only to relieve the stress of the dental profession, the consequences for the respondents were basically the same. They all became alcohol dependent and had to receive treatment for alcohol dependency.

Thus there were signs of adverse effects of alcohol amongst a minority of the respondents in the quantitative phase, and all in the qualitative phase of the study.

7.6.5 General beliefs

To substantiate the answers to the research questions, the researcher incorporated the opinion of the respondents regarding their perspective on alcohol use, linked to the stress and strain of the dental profession by other dentists, and came to the following conclusions:

The majority of respondents that responded did not link their own alcohol consumption to the stress and strain of their profession. Rather, they had a different view when it comes to alcohol consumption, linked to the stress and strain of the dental profession, from other dentists. A significant number of the respondents reported that:

- Dental students consume alcohol to relieve the stress and strain of the dental curriculum.
- They believe that the habit of alcohol use among dentists begins early in their career at dental school.
- They believe that some dentists consume alcohol to relieve the stress of keeping to difficult appointment schedules.
- They believe that some dentists consume alcohol to relieve the stress of financial pressures.
- They believe that some dentists consume alcohol to relieve the stress of staff related problems.
- They believe that some dentists consume alcohol to relieve the stress of practice management in general.
- They believe that dentists who experience high social anxiety, deliberately take alcohol to cope with their social fears.
- They believe that dentists experience more occupational stress than the other health professionals.
- They believe that dentists consume more alcohol than other health professionals.
- They believe that personal factors may be much stronger predictors for hazardous alcohol consumption among dentists than practising dentistry as such.
- That dentists sometimes deliberately stay away from their practices because they are scared that it will be noticed that they had been drinking.
- They are of the opinion that some dentists have been reported to the HPCSA because of alcohol use.
- They are of the opinion that some dentists perform dental procedures under the influence of alcohol.
- They are of the opinion that 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 obvious.

7.6.6 Training of dentists

The majority of the respondents mentioned stress during their training at university, and this should be taken into consideration during curriculum planning. The dental students need more support services since they are not sufficiently trained in communication skills, people skills, management skills and coping skills.

7.7 Recommendations

Based on the above conclusions, the following recommendations are proposed. These recommendations are derived from the quantitative and qualitative phases of this study. The findings of this study emphasized the fact that dental students should be made more aware of the stress factors in the dental profession, and how to cope with them in a healthy manner. Modules should be included in dental curricula to address these factors. The literature review revealed that dentistry is a rewarding but demanding profession and the well being of dentists depends largely on how they balance these rewards and demands.

7.7.1 Dental curricula

The literature clearly states that the prevention of chemical dependency, among dentists, should start at dental school because chemical dependency can be prevented if it is recognized early enough.

The following recommendations are derived from the quantitative study:

The following aspects should be included in the dental curricula:

- Advanced practice management modules which include financial management, time and stress management modules;
- Self awareness, life skills and communication modules;
- Modules on how to deal with patient expectations;
- Dental students must spend time in a private practice as part of community outreach programmes;
- A module on substance abuse and the harmful effect of it;
- Counselling facilities for dental students must be available;
- Patient interaction: Teach students that invading another's personal space may be stressful.

From the qualitative phase, the following recommendations emerged as reinforcement of the quantitative phase with regard to: recommendations of what should be included in dental curricula to prepare students to manage stress in dental practice.

- More training in dental ethics.
- Socializing skills. Socializing does not mean that you must use alcohol.
- Make dental students aware that they must not seek alternatives, such as alcohol or medication to cope with stress related to the profession.
- Teach dental students to see dental patients as humans and treat them holistically.
- Rehabilitated alcoholic dentists should visit dental schools and inform dental students of the consequences of alcohol as a coping mechanism for stress.
- The role of the HPCSA as a support system for dentists.

7.7.2 Managing and alleviating stress

From the literature study it is clear that dentistry is a very stressful profession and individual differences among dentists determine to a large degree what is experienced as work stress. However, stress-control is necessary to make a dental practice successful.

From the quantitative phase of this study, among South African dentists, the following recommendations to manage or alleviate stress emerged.

- Dentists must socialize more but not necessarily with alcohol;
- It is important to identify stress factors and deal with them positively and promptly;
- Take time off and reduce working hours to do enjoyable things;
- Physical training, sport and exercise is important for physical well being;
- Practise recreational activities and hobbies to balance life style;
- It is important to have realistic expectations;
- Refer difficult dental procedures to a specialist to reduce occupational stress – Share responsibilities;
- Manage your staff efficiently and plan your day by day routine realistically;
- Do the financial planning of your practice accurately;
- Dentistry must not be your only source of income – Have additional means of income;
- Create or join colleague support groups to discuss occupational stress that is common to all;
- Make use of financial experts, as dentists are not trained in this field;
- Implement proper time and practice management;
- Delegate certain responsibilities to other staff members – Don’t try and do everything yourself;
- Patient booking must be realistic, and one should never overbook yourself;

- Remuneration must come from quality dental work not from mass work – loads;
- Dentists must encourage medical aids for better and faster payments;
- Rather contract fees out with no medical aid payments, but only direct cash payments;
- Dentists must learn to develop a positive attitude towards life;
- Religion – Believe in a higher power that will assist you;
- Seek professional help when needed and go for counselling;
- If dentistry is too stressful, consider another way to generate income;
- Consider to practise in a group practice or practise with a partner (associate) to alleviate stress;
- Have a healthy life-style in general with the correct nutritional intake, sleep and exercise;
- Dentists must lower their financial expectations;
- Dentists must not be in competition with their colleagues;
- A dental practice must be planned like any other business.

From the qualitative phase of this study the following recommendations emerged as reinforcement of the quantitative phase with regard to: recommendations for dentists to manage or alleviate stress better.

- Socialize more during free time, but not necessarily with alcohol, there are many other healthier ways.
- Try to remain calm in difficult situations by making the practice environment as comfortable as possible.
- Take your time in doing quality not quantity jobs.
- Plan your available time carefully, don't squeeze patients in for financial reasons because more patients mean more money. This causes additional stress that may lead to alcohol use as a coping mechanism.

- Dentists must follow all the guidelines for stress management. Financial pressure in the sense of overspending creates a lot of stress. Don't overload yourself with work, create time for yourself and your family

7.7.3 Dental practice

From the literature search emerged the fact that stress is endemic and epidemic in today's fast-paced world and dentists are not immune to stress. Subsequently a list of recommendations made by the respondents in general follow:

- Dentists must develop time management strategies;
- Dentists may use alcohol to socialize – Not to drink their stress away;
- Dentist must arrange team building sessions with their staff members;
- Staff members in a dental practice must develop problem solving skills;
- Dentists must move away from the culture that it is "cool" to drink;
- Dentists must deal effectively with medical aids and should appoint support staff;
- Dentists must treat their practices as any other business and manage it properly;
- Dentists must consider having hobbies to relieve their stress levels;
- Arrange regular meetings with staff members so that problems can be discussed;
- Dentists must know that stress is part of life and they must learn to cope with it;
- Occupational stress begins at dental school but increases in a dental practice;
- One of the respondents recommended that alcohol should be banned in South Africa, it causes harm, death and disintegration of families;
- Dentists in private practice should consider work in partnerships;
- The reality of dentistry must be spelt out to students in their 1st year;
- Dentists must communicate more regularly with their colleagues;

- Dentists must be engaged in a good exercise programme;
- Test a student for stress tolerance before selecting him into dental school;
- Dentists must be made aware of changes in fees and structures by the medical aids;
- A dentist must love what he does, his profession and his patients;
- Dentists should not overload themselves for the sake of money;
- Contract out and do not charge medical aid fees for procedures;
- Alcohol must not be allowed at continuous professional development courses.

7.7.4 Specific recommendations

From this study, the researcher makes the following recommendations.

This research enabled the researcher (being a dentist himself) to obtain answers to all of the research questions he formulated for this research. Taking these answers into account, the researcher makes the following recommendations.

- Dental students should be selected more carefully, prior to admission, in terms of their stress management abilities.
- Modules on stress, and stress management, specifically aimed at dentists, should be included in the curricula at dental schools.
- Modules on people skills, life-skills, communication skills and dealing with patients holistically should be included in the curricula at dental schools
- Modules on management of a private practice, financial management and personnel management should be included in curricula at dental schools.
- As part of the psychology course, dental students should be made aware of the consequences of substance use/abuse as a coping mechanism.
- Dental students should, as part of the fulfilment of their clinical quota, spend time in a private dental practice.

- The HPCSA should include stress management courses, specifically aimed at dentists, in their compulsory CPD programme. In such courses, it can be explained to dentists that they are human and what is applicable to the rest of the population is also applicable to them. Unhealthy coping mechanisms, such as the use of alcohol to cope, may lead to devastating consequences.
- Rehabilitation centres for alcohol dependency, as well as other institutions involved in the treatment and prevention of substance abuse, should develop intervention and treatment programmes specifically aimed at dentists with an alcohol dependency problem. These programmes can also be used where there are indications that a dentist is developing an alcohol dependency problem.

The content of this thesis reflects a general profile on alcohol consumption, and the adverse effects of alcohol consumption as a coping mechanism, among dentists, and can assist in these recommendations.

7.8 Closing remarks

From this study among South African dentists it is clear that the dentists included in this study experience occupational stress levels and that there are dentists that consume alcohol to a more or lesser degree. What was significantly found in this study, is the fact that the majority of dentists, that consume alcohol, do it for socialization reasons only. However, there are South African dentists that consume alcohol to escape the stress and strain of the dental profession. This study has also indicated that there are dentists that develop an alcohol dependency problem as a result of the stress and strain of their profession.

The above mentioned recommendations for dentists to manage or alleviate stress better, comes directly from the respondents who have experienced these stressors themselves. The researcher primarily aimed to construct a profile on

alcohol consumption among South African dentists, seen from a dentist's perspective, in order for this information to be utilized by institutions, such as dental schools and rehabilitation facilities. The findings of this study can be utilized by rehabilitation facilities to develop more scientific intervention models for alcohol abuse and dependency, specifically among dentists. Furthermore, this information can be utilized by dental training schools in their practice management and stress management modules. This information can also be utilized by the HPCSA to give them a better understanding of stress factors and coping mechanisms among South African dentists and to recommend CPD courses in this regard. This information can further be utilized to enhance the personal well- being of dentists.

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University of Pretoria

Research Proposal and Ethics Committee
Faculty of Humanities

5 February 2007

Dear Doctor Carbonatto

Project:	***A profile on alcohol consumption among South African dentists – A dentist's perspective***
Researcher:	**JH Olivier**
Supervisor:	**Dr C Carbonatto**
Department:	**Social Work and Criminology**
Reference number:	**71006398**

Thank you for your response to the Committee's letter of 8 December 2006.

I have pleasure in informing you that the Research Proposal and Ethics Committee formally approved the above study at an *ad hoc* meeting held on 1 February 2007. The approval is subject to the candidate abiding by the principles and parameters set out in his application and research proposal in the actual execution of the research.

The Committee requests you to convey this approval to Dr Olivier.

We wish you success with the project.

Sincerely

Prof. Brenda Louw
Chair: Research Proposal and Ethics Committee
Faculty of Humanities
UNIVERSITY OF PRETORIA

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Appendix B

University of Pretoria

Department of Social Work and Criminology
Tel. +27 12 420-2325
Fax. +27 12 420-2093

VOLUNTARY CONSENT FORM

Participant's Name:..... Date: .....

Principal Investigator: Dr J H Olivier
University of Pretoria, PhD Student (71006398)
PO BOX D18
MEDUNSA
0204

Dear participant

I am a PhD student at the Department of Social Work and Criminology, University of Pretoria. You are invited to volunteer to participate in my research project on: "A profile on alcohol consumption among South African dentists – A dentists perspective"

This letter is to help you to decide if you would like to participate. Before you agree to take part in this study you should fully understand what is involved. If you have any questions, which are not fully understood in this leaflet, do not hesitate to ask the researcher. You should not agree to take part unless you are completely happy about what is expected of you.

It is well recognised that dentistry is a stressful profession. However there are conflicting views to what extent such stress contributes to hazardous alcohol consumption among dentists. A substantial amount of international research concerning substance dependency, including alcohol dependency, among dentists is available but relatively little is known about the use and abuse of alcohol among South African dentists. The information obtained by means of this research will help to explain and give a better understanding of alcohol abuse among South African dentists, and the factors that may contribute to it.

If you participate in the quantitative phase you will be required to complete a questionnaire. The completion of the questionnaire may take about 30 minutes. An appointment will be made with you, where the questionnaire will be delivered by hand. The researcher will wait while you complete the questionnaire and collect it from you after you have sealed it in an anonymous envelope. You will place the envelope with other similar envelopes in a box and shuffle the box. In this way the researcher will not be able to identify which questionnaire belongs to you. Please remember not to write your name on the questionnaire. If you participate in the qualitative phase of this research (interview schedule), the researcher will tape record the interview with your consent. Should you disagree that the interview be recorded the researcher will keep records and interview notes anonymously. All data that is acquired by means of this research will be kept in a safe place for 15 years and thereafter be destroyed.

The researcher is aware of the fact that negative behavior concerning alcohol abuse of the past may be recalled to memory during this specific investigation and could be the beginning of renewed emotional trauma or embarrassment to you. Possible risks or harm that could emanate from participation in the research will be dealt with sensitively. Should it be needed debriefing counseling will be arranged. A professional counselor at Stabilis reabilitation centre will then be utilized for this purpose.

The study protocol was submitted to the Research Ethics Committee of the University of Pretoria, Faculty of Humanities. This committee has granted written approval.

Your participation in this study is voluntary and you can refuse to participate or stop at any time without stating any reason.

Data obtained by means of this research will be utilized for a research report and articles in scientific journals and will be kept in a safe place for 15 years as dictated by international use, and will thereafter be destroyed.

You hereby also give consent that information obtained by means of the questionnaire or interview schedule may be used for training and research at the University of Pretoria. This consent is given with the understanding that your

identity will in all circumstances be kept anonymous and that all your personal information will be managed strictly confidentially.

If you have any questions during this study, please do not hesitate to approach me.

I sincerely appreciate your help.

Yours truly,

J Olivier
Researcher

1. ***Title of study***
   A profile on alcohol consumption among South African dentists – A dentists perspective

2. ***Purpose of the Study:***
   This study will be mainly exploratory 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 these dentists. However, a small descriptive component will be included where the researcher will make recommendations for further research to develop intervention models specifically aimed at dentists with an alcohol dependency problem (or the indications are there that a dentist is busy developing a dependency problem) that could be related to his profession.

3. ***Procedures:***
   Questionnaires and interview schedules. Data obtained by means of this research will be utilized for a research report and articles in scientific journals and will be kept in a safe place for 15 years as dictated by international use, and will thereafter be destroyed.

4. ***Risks and Discomforts:***
   The researcher is aware of the fact that negative behavior concerning alcohol abuse of the past may be recalled to memory during this specific investigation and could be the beginning of renewed emotional trauma or embarrassment for the participant. Possible risks or harm that could emanate from participation in the research will be dealt with great sensitivity. Should it be needed the necessary counseling will be arranged by the researcher. Dr Erlank from the Stabilis Rehabilitation Centre in Pretoria has agreed to assist the researcher in this regard.

5. ***Benefits Research:***

Participants will not benefit directly from this research, (no material gain) but may benefit indirectly because the information obtained by means of this research will help to explain and give a better understanding of alcohol abuse among South African dentists, and the factors that may contribute to it.

6. ***Participant's Rights:***

Participation in this study is entirely voluntary and participants can refuse to participate or withdraw at any time without stating a reason. .

7. ***Financial Compensation:***

None

8. ***Confidentiality:***

All information obtained will be treated confidentially. Data and conclusions that may be reported will not include any information which may lead to the identification of any participant in this study. All signed letters of informed consent will be kept in a confidential file. Only the researcher will have access to this information and recorded interviews. There are no foreseeable risks involved. Questionnaires will be completed anonymously by respondents and will be personally distributed and collected by the researcher.

9. Dr J Olivier can be contacted at (012) 521 4813 (office hours) or (012) 346 2430 (after hours) if there are any questions of concerns

I understand my rights as a researcher subject, and I voluntarily consent to participation in this study, I understand what the study is about and how and why it is being done. I will receive a signed copy of this consent form.

To be completed by the investigator and participant

Participant's name ..... (Please print)

Participants signature .....
Date: ___/___/___

Investigator's name ..... (Please print)

Investigator's signature .....
Date: ___/___/___

Appendix C

A PROFILE ON ALCOHOL CONSUMPTION AMONG SOUTH AFRICAN DENTISTS – A DENTIST'S PERSPECTIVE

DEAR RESPONDENT

This questionnaire is aimed at determining factors that causes stress, strain and anxiety among South African dentists that may lead to alcohol use as a measure to relieve stress, strain and anxiety among dentists.

INSTRUCTIONS

Please indicate your answer with a circle around the appropriate number in a shaded box or write your answer to a question in the shaded space provided.

THE QUESTIONNAIRE IS CONFIDENTIAL AND ANONYMOUS

OFFICE USE

V1			

1. BIOGRAPHICAL INFORMATION

1.1 Indicate your gender

Male	1	V2
Female	2	

1.2 Indicate your age group

20-29 years	1	V3
30-39 years	2	
40-49 years	3	
50-59 years	4	
60 years and above	5	

1.3 Indicate your marital status

Single	1	V4
Married	2	
Separated	3	
Divorced	4	
Widowed	5	
Living together / Cohabiting	6	

1.4 In which province of the RSA did you **mostly** grow up and attend school

Northern Cape	1	V5
Eastern Cape	2	
Western Cape	3	
Free State	4	
Gauteng	5	
North West Province	6	
Northern Province	7	
Kwa-Zulu Natal	8	
Mpumalanga	9	
Outside the RSA	10	

1.5 To which South African population group do you belong?

Black	1	V6
White	2	
Coloured	3	
Indian / Asian	4	

1.6 Indicate your **current** form of full time practice

General dental practitioner in private practice	1	V7
General dental practitioner in the health services or lecturer at a dental school	2	V8
Dental specialist in private practice	3	V9
Dental specialist in the health services or lecturer at a dental school	4	
Registered as a non-practicing dentist / specialist	5	
Retired	6	

1.7 At which university did you receive your Bachelor's degree in Dentistry

Medical University of Southern Africa	1	V10
University of Pretoria	2	
University of Stellenbosch	3	
University of Western Cape	4	
University of the Witwatersrand	5	
Outside the RSA	6	

1.8 At which university / universities did you receive your post graduate qualifications?

Not applicable	1	V11
Medical University of Southern Africa	2	V12
University of Pretoria	3	
University of Stellenbosch	4	
University of Western Cape	5	
University of the Witwatersrand	6	
Outside the RSA	7	

1.9 For how long have you been practicing as a registered dentist or dental specialist?

0 years	1	V13
1-10 years	2	
11-20 years	3	
21-30 years or more	4	

2. BACKGROUND INFORMATION

2.1 With whom did you **predominantly** grow up?

Both of your biological parents	1	V14
Biological mother and a step father	2	
Biological father and a step mother	3	
Biological mother only	4	
Biological father only	5	
Family members or grandparents	6	
Foster parents, other than family members	7	
Orphanage	8	

2.2 If you did not grow up with both of your biological parents, what was the reason?

Parents divorced / separated	1	V15
Parent (s) deceased	2	
Other (specify)	3	

2.3 How many primary schools did you attend during your scholastic years?

One primary school	1	V16
Two primary schools	2	
Three or more primary schools	3	

2.4 How many secondary schools did you attend during your scholastic years?

One secondary school	1	V17
Two secondary schools	2	
Three or more secondary schools	3	

2.5 In how many towns, cities, villages did you live in the first 18 years of your life?

One	1	V18
Two	2	
Three	3	
Four	4	
Five or more	5	

2.6 How would you describe your health in the first 18 years of your life?

Good / seldom ill	1	V19
Often being ill and received treatment	2	

2.7 How would you describe the financial position of the family who raised you?

Wealthy	1	V20
Middle class (average)	2	
Poor / Poverty stricken	3	

2.8 How would you describe the alcohol habits of your **female** guardian (mother, stepmother, grandmother etc.) during your childhood?

Did not use alcohol	1	V21
Light social non-problematic drinker	2	
Heavy social non-problematic drinker	3	
Problematic drinker	4	
Alcohol dependent	5	

2.9 How would you describe the alcohol habits of your **male** guardian (father, stepfather etc) during your childhood?

Did not use alcohol	1	V22
Light social non-problematic drinker	2	
Heavy social non-problematic drinker	3	
Problematic drinker	4	
Alcohol dependent	5	

2.10 Considering the use of medication or drugs by your parent(s) / guardian(s) (excluding alcohol)

2.10.1 Did your **female** parent/guardian who raised you use any prescription medication e.g. (pain killers, tranquilizers, anti- depressants etc) on a regular basis?

Yes	1	V23
No	2	

2.10.2 Did your **male** parent/guardian who raised you use any prescription medication e.g. (pain killers, tranquilizers, anti- depressants etc) on a regular basis

Yes	1	V24
No	2	

2.10.3 Did your **female** parent/guardian, who raised you, use any street drugs from drug dealers on a regular basis?

Yes	1	V25
No	2	

2.10.4 Did your **male** parent/guardian, who raised you, use any street drugs from drug dealers on a regular basis?

Yes	1	V26
No	2	

2.10.5 Have you ever had a problem with prescription drugs or street drugs?

Yes	1	V27
No	2	

2.11 How would you describe your relationship with your **female** parent / guardian during your childhood?

Poor	1	V28
Satisfactory	2	
Good	3	

2.11.1 How would you describe your relationship with your **male** parent / guardian during your childhood?

Poor	1	V29
Satisfactory	2	
Good	3	

2.11.2 How would you describe the following components of your relationship with your **female** parent / guardian?

	POOR	GOOD	
Experiencing security	1	2	V30
Experiencing acceptance	1	2	V31
Open and meaningful communication	1	2	V32
Consistent discipline	1	2	V33
Support and encouragement	1	2	V34
Experiencing acknowledgement from your female parent / guardian	1	2	V35
Receive positive and constructive problem solving skills from your female parent /guardian	1	2	V36
Openness to express emotions towards your female parent / guardian	1	2	V37
An atmosphere created by your female parent /guardian for you to develop a positive self-image and self-confidence	1	2	V38

2.11.3 How would you describe the following components of your relationship with your **male** parent / guardian?

	POOR	GOOD	
Experiencing security	1	2	V39
Experiencing acceptance	1	2	V40
Open and meaningful communication	1	2	V41
Consistent discipline	1	2	V42
Support and encouragement	1	2	V43
Experiencing acknowledgement from your male parent / guardian	1	2	V44
Receive positive and constructive problem solving skills from your male parent /guardian	1	2	V45
Openness to express emotions towards your male parent / guardian	1	2	V46
An atmosphere created by your male parent / guardian for you to develop a positive self- image and self-confidence	1	2	V47

2.12 Concerning your childhood and school career: (Mark all the applicable)

	Yes	No			
In leadership positions	1	2	V48		
Outstanding school achievements	1	2	V49		
Your childhood and school career were satisfying and positive	1	2	V50		
Participation in sport or extra-mural activities	1	2	V51		
Emotional problems such as depression, anxiety and a bad self-image	1	2	V52		
Experimenting with drugs	1	2	V53		
Experimenting with alcohol	1	2	V54		
Problems at school e.g. having difficulty in socializing, learning and discipline	1	2	V55		
Family problems	1	2	V56		
Easily influenced by friends (group pressure)	1	2	V57		
Truancy (bunking school), detention, bullying and stealing	1	2	V58		

3. STRESS AND COPING WITH STRESS

3.1 Did you ever use or over-use (abuse) alcohol or any other substances as a student during your university studies: (Mark all applicable)

Use alcohol as a student	1	V59		
Abuse (over-use) alcohol	2	V60		
Use any other mood altering substances during your university days	3	V61		

3.2 Should you have used alcohol or other substances as a dental student during your university career, for what reason did you use it? Indicate all applicable aspects

Not applicable	1	V62		
Way of relaxation as a result of a demanding dental study	2	V63		
Relief from depression / mood disorder	3	V64		
Way of escaping from stress related to the field of study (dentistry)	4	V65		
Relief from sleeping problems	5	V66		
Irregular and long working and study hours	6	V67		
Way of getting relief from emotional experiences related to dental training	7	V68		
A way of socializing	8	V69		

3.3 Should you have used or abused alcohol as a dental student, what positive effects did alcohol have on you? Indicate all applicable aspects.

Not applicable	1	V70		
Relaxing	2	V71		
Calming	3	V72		
Relief of depression / mood disorder	4	V73		
Relief of frustration	5	V74		
Relief of exhaustion	6	V75		
Relief of grief (emotional pain)	7	V76		
Relief of loneliness	8	V77		
Relief of anxiety	9	V78		
Providing self-confidence	10	V79		
Escaping from daily work stress	11	V80		
Relieving sleep problems resulting from work stress	12	V81		
Relieving emotional stress resulting from the dental profession	13	V82		
Relieving physical pain/health problems	14	V83		

3.4 Indicate which of the following cause you stress in the dental profession (Mark all applicable)

Irregular long working hours	1	V84		
Demands and expectations of patients	2	V85		
Working in close physical range of the patient (invasion of your personal space)	3	V86		
Management and business demands of a practice	4	V87		
Balance between professional and family life	5	V88		
Emotional and physical exhaustion	6	V89		
Minimal time for personal and family recreation because of the dental profession	7	V90		
Time management in terms of appointments	8	V91		
No built in social psychological support system in the profession	9	V92		
Fear of risk of HIV and other infections	10	V93		
Safety issues e.g. physical injury	11	V94		
Financial issues	12	V95		
The fear of legal action against you	13	V96		
Fear of loss of patients to other dentists	14	V97		
Fear of dental technologists work not being on time or up to standard	15	V98		

3.5 Should you be using alcohol currently, for what reason(s) do you use alcohol? Indicate all applicable aspects.

Not applicable	1	V99		
As a coping mechanism	2	V100		
Relaxing	3	V101		
Calming	4	V102		
Relief of depression / mood disorder	5	V103		
Relief of frustration	6	V104		
Relief of total exhaustion	7	V105		
Relief of grief (emotional pain)	8	V106		
Relief of loneliness	9	V107		
Relief of anxiety	10	V108		
Providing self-confidence	11	V109		
Escaping from daily work stress	12	V110		
Relieving sleep problems resulting from work stress	13	V111		
Relieving emotional stress resulting from the dental profession	14	V112		
Relieving physical pain/health problems	15	V113		
To give you courage to perform a difficult dental procedure	16	V114		
To give you courage to perform a dental procedure on a difficult patient	17	V115		
To perform a dental procedure on a high profile patient that is your superior	18	V116		
To get rid of a hangover before treating patients	19	V117		
In order for you to cope with the stress created by the close contact that you have with patients (invading into their personal space)	20	V118		
Other Specify) 1…… 2……		V119 V120		

3.6 What measures do you use to relieve stress? Indicate all applicable measures.

Exercise	1	V121		
Eating	2	V122		
Music	3	V123		
Movies / Videos / DVD	4	V124		
Socializing with friends	5	V125		
Smoking	6	V126		
Emotional outbursts	7	V127		
Alcohol	8	V128		
Other chemical substances	9	V129		
Hobbies	10	V130		
Receive counseling as a way of stress relief	11	V131		
Other (specify) 1…… 2……		V132 V133		

4. HISTORY OF ALCOHOL USE OR ABUSE AND DYSFUNCTION

PLEASE ANSWER THE FOLLOWING QUESTIONS AS CORRECTLY AS POSSIBLE BECAUSE IT IS THE BASIS OF THIS RESEARCH
(AN ALCOHOLIC DRINK REFERS TO A GLASS OF WINE, ONE BEER, ONE TOT OF WHISKY, BRANDY ETC.)

4.1 Have you ever had 5 or more drinks at least on one occasion per month in the last year?

Yes	1	V134
No	2	

4.2 Have you ever had 5 or more drinks at least on 5 occasions per month in the last year?

Yes	1	V135
No	2	

4.3 Considering your alcohol consumption on **weekend days** (Friday – Sunday):

4.3.1 How many **weekend days** (Friday –Sunday) do you drink alcohol on average?

I never use alcohol on weekends	1	V136
I drink on weekend days only occasionally	2	
3 days	3	
2 days	4	
1 day	5	

4.3.2 How many alcoholic drinks (glasses of wine, beers, tots of brandy, whisky etc) do you drink on average on a **weekend day** (Friday to Sunday)?

I never drink alcohol on weekend days	1	V137
1 - 2 drinks	2	
3 - 4 drinks	3	
5 - 6 drinks	4	
7 - 11 drinks	5	
Eleven or more drinks	6	

4.4 Considering your alcohol consumption on **weekdays** (Monday – Thursday)

4.4.1 How **many weekdays** (Monday-Thursday) do you drink alcohol on average?

I never drink on weekdays	1	V138
I only drink occasionally on week days	2	
One day	3	
Two days	4	
Three days	5	
Four days	6	

4.4.2 How many alcoholic drinks do you drink on average on a **weekday** (Monday – Thursday)?

I never drink alcohol on weekdays	1	V139
1 - 2 drinks	2	
3 - 4 drinks	3	
5 - 6 drinks	4	
7 - 11 drinks	5	
Eleven or more drinks	6	

4.5 Do you consider yourself?

A non-drinker	1	V140
A light-social drinker	2	
A heavy-social drinker	3	
A problematic drinker	4	
Alcohol dependent	5	

4.6 Indicate how the use of alcohol has affected your work as a dentist. Indicate all applicable aspects

Getting behind in work due to alcohol consumption	1	V141
Call in sick or late due to alcohol consumption	2	V142
Can not get along with people due to alcohol consumption	3	V143
Neglect your work due to alcohol consumption	4	V144
Cancel patients due to alcohol consumption	5	V145
Provide less than your best patient care due to alcohol consumption	6	V146
The use of alcohol has not affected my work as a dentist in any way	7	V147
Other (Specify) 1…….. 2……..		V148 V149

4.7 Has alcohol ever affected your personal life in any of the following ways? Indicate all applicable aspects

You worry at times that you may be using too much alcohol or too often	1	V150
Neglecting to do daily routine tasks such as shopping etc due to alcohol use	2	V151
Neglecting your personal appearance (clothing, shaving etc)	3	V152
Bad behavior due to alcohol use	4	V153
Motor car or any other accident due to your alcohol consumption	5	V154
Convicted in a court of law for something that you did under the influence of alcohol	6	V155
Seriously considered suicide because of your alcohol drinking habit	7	V156
Other (specify) 1……. 2…….		V157 V158

4.8 Has alcohol ever affected your functioning in your personal life in respect of any of the following?

Relationships with your family	1	V159		
Marriage	2	V160		
Sex life	3	V161		
Social life	4	V162		
Sport	5	V163		
Religion	6	V164		
Finances	7	V165		
Other (specify) 1.		V166		
2.		V167		

4.9 Has alcohol use/abuse affected your health in respect of any of the following? (Indicate all applicable)

Seen a psychiatrist, psychologist, counselor or social worker due to psychosocial problems resulting from alcohol consumption	1	V168		
Been reported to the Medical and Dental Professions Board of HPCSA due to your alcohol drinking habits	2	V169		
Been admitted to a rehabilitation facility for alcohol abuse	3	V170		
Been diagnosed with alcohol related diseases such as alcoholic liver disease, diabetes etc	4	V171		
Been advised to stop your alcohol drinking habits because it is affecting your health	5	V172		
Other (specify) 1…… 2……		V173 V174		

5 A DENTISTS PERSPECTIVE OF ALCOHOL USE, LINKED TO THE STRESS AND STRAIN OF THE DENTAL PROFESSION

5.1 Do you agree that?

	Yes	No			
Dental students consume alcohol to relieve the stress and strain of the dental curriculum	1	2	V175		
The habit of alcohol use among dentists begins early in their career at dental school?	1	2	V176		

5.2 Do you agree that some dentists?

	Yes	No			
Consume alcohol to relieve the stress of keeping to difficult appointment schedules	1	2	V177		
Consume alcohol to relieve the stress of financial pressures	1	2	V178		
Consume alcohol to relieve the stress of staff related problems	1	2	V179		
Consume alcohol to relieve the stress of practice management in general	1	2	V180		

5.3 Do you believe that?

	Yes	No			
Dentists who experience high social anxiety, deliberately take alcohol to cope with their social fears?	1	2	V181		
Dentists experience more occupational stress than the other health professionals	1	2	V182		
Dentists consume more alcohol than other health professionals	1	2	V183		
Dentistry is not the glamorous job that it is made out to be	1	2	V184		
Personal factors may be much stronger predictors for hazardous alcohol consumption among dentists than practicing dentistry as such?	1	2	V185		

5.4 Do you believe that?

	Yes	No			
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	1	2	V186		
Close relatives, especially spouses of dentists with hazardous alcohol-drinking habits, hide the fact because they are scared of the consequences	1	2	V187		

5.5 Do you believe that?

	Yes	No			
Dentists sometimes deliberately stay away from their practices because they are scared that it will be noticed that they had too much to drink.	1	2	V188		
Some dentists have been reported to the HPCSA because of alcohol use	1	2	V189		
Some dentists perform dental procedures under the influence of alcohol	1	2	V190		
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?	1	2	V191		

6 FUTURE RECOMMENDATIONS

6.1 What should be included in dental curricula to prepare students to manage stress in dental practice?

1……...

2……..

V192		
V193		

6.2 What can dentists do to help manage or alleviate stress better?

1……...

2……

V194		
V195		

6.3 Specify any other recommendations

1……..

2……..

V196		
V197		

THANK YOU FOR YOUR TIME AND CO-OPERATION

Appendix D

INTERVIEW SCHEDULE

A PROFILE ON ALCOHOL CONSUMPTION AMONG SOUTH AFRICAN DENTISTS – A DENTIST'S PERSPECTIVE

1. Introductory questions

1.1 Briefly tell me the history of your alcohol dependency. When did it start and what contributed to it?

1.2 Reflect on your treatment for alcohol abuse.

2. Background

2.1 Do you come from a broken up family (parents divorced, separated, step mother, step father etc)?

2.2 How would you describe your relationship with your parent(s) / guardian(s) with whom you grew up?

3.3 How would you describe the alcohol drinking habits of your parent(s) / guardian(s) with whom you grew up?

2.4 Did any of your parents or guardians with whom you grew up use prescription drugs e.g. tranquilizers or even street drugs on a regular basis?

2.5 Tell me about the financial status of the family who raised you, and how did it affect you?

2.6 Except alcohol, did you ever use prescription drugs or street drugs on a regular basis, and how did it affect you?

3. Stress factors in the dental profession linked to alcohol use

3.1 Being a dentist or dental specialist, which part of dentistry causes you the most stress and strain e.g. working on patients, financial issues etc?

3.2 What did you do in the past to relieve stress caused by the dental profession?

3.3 What do you presently do to relieve stress caused by the dental profession?

3.4 Have you ever had the need to have a drink before performing a dental procedure, and why?

3.5 Tell me how alcohol enabled you to cope with the stress and strain of the dental profession.

3.6 At what stage of your career did you realize that your drinking habits have become a problem?

4. Quantity and frequency of alcohol use

4.1 Tell me about your alcohol consumption as a dental student.

4.2 Tell me about your alcohol drinking habits, as a dentist, prior to treatment.

4.3 Has your drinking at hazardous levels been reported to the HPCSA?

4.4 After your rehabilitation, did you completely abstain from alcohol use?

4.5 Reflect on your alcohol usage to date.

5. Coping mechanisms

5.1 What are you currently doing to earn a living, are you still practicing as a dentist?

5.2 Which mechanisms do you now apply to cope with the stress and strain of the dental profession?

5.3 In the past, apart from alcohol, what other coping mechanisms did you apply to cope with the stress and strain of the dental profession, and were these mechanisms effective?

6. Recommendations

6.1 Do you think that dental students are made fully aware of the stress and strain of the dental profession and how can dental schools help to prepare dental students for the stress and strain of the dental profession?

6.2 What can be built into the dental curriculum to address these issues?

6.3 Suggest recommendations for dentists to cope with dental stress.

Finally – Do you think that dentistry contributed to the fact that you became alcohol dependent.